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North Carolina

MEDICAL JOURNAL

Official Journal of the NORTH CAROLINA MEDICAL SOCIETY

January 1982, Vol. 43, No. 1

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ND

A stylized landscape illustration. A large, empty circle is positioned in the upper right quadrant. Below it, thick, black, wavy lines represent a mountain range or a body of water. The entire scene is enclosed within a thick black border that has rounded corners at the top and bottom.

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INDICATIONS:

Although the principal indication for cloxacillin sodium is in the treatment of infections due to penicillinase-producing staphylococci, it may be used to initiate therapy in such patients in whom a staphylococcal infection is suspected. (See Important Note below.)

Bacteriologic studies to determine the causative organisms and their sensitivity to cloxacillin sodium should be performed.

IMPORTANT NOTE

When it is judged necessary that treatment be initiated before definitive culture and sensitivity results are known, the choice of cloxacillin sodium should take into consideration the fact that it has been shown to be effective only in the treatment of infections caused by pneumococci, Group A beta-hemolytic streptococci, and penicillin G-resistant and penicillin G-sensitive staphylococci. If the bacteriology report later indicates the infection is due to an organism other than a penicillin G-resistant staphylococcus sensitive to cloxacillin sodium, the physician is advised to continue therapy with a drug other than cloxacillin sodium or any other penicillinase-resistant semi-synthetic penicillin.

Recent studies have reported that the percentage of staphylococcal isolates resistant to penicillin G outside the hospital is increasing, approximating the high percentage of resistant staphylococcal isolates found in the hospital. For this reason, it is recommended that a penicillinase-resistant penicillin be used as initial therapy for any suspected staphylococcal infection until culture and sensitivity results are known.

Cloxacillin sodium is a compound that acts through a mechanism similar to that of methicillin against penicillin G-resistant staphylococci. Strains of staphylococci resistant to methicillin have existed in nature and it is known that the number of these strains reported has been increasing. Such strains of staphylococci have been capable of producing serious disease, in some instances resulting in fatality. Because of this, there is concern that widespread use of the penicillinase-resistant penicillins may result in the appearance of an increasing number of staphylococcal strains which are resistant to these penicillins.

Methicillin-resistant strains are almost always resistant to all other penicillinase-resistant penicillins (cross-resistance with cephalosporin derivatives also occurs frequently). Resistance to any penicillinase-resistant penicillin should be interpreted as evidence of clinical resistance to all, in spite of the fact that minor variations in *in vitro* sensitivity may be encountered when more than one penicillinase-resistant penicillin is tested against the same strain of staphylococcus.

CONTRAINDICATIONS:

A history of a previous hypersensitivity reaction to any of the penicillins is a contraindication.

RESULTS OF ORAL THERAPY revealed a high percentage of treatment failures with penicillin V potassium, but *no* failures with Tegopen.

		Given Tegopen® (cloxacillin sodium)	Given penicillin V-K
<i>Staphylococcus aureus</i>	(78 patients)	39	39
Returned to clinic at one week	.....	29†	38†
Treatment failure at one week	.....	0	18 (47.4%)
<i>Staphylococcus aureus</i> and <i>Streptococcus pyogenes</i>	(9 patients)	4	5
Returned to clinic at one week	.....	4	5
Treatment failure at one week	.....	0	2 (40%)
No initial bacterial growth	(14 patients)	9	5
All 14 healed, regardless of which antibiotic was administered.			
Beta-hemolytic <i>Streptococcus</i>	(1 patient)	0	1
TOTALS:	102 patients	52 patients	50 patients

†Eleven patients did not return for their one-week checkup. These were all called by telephone, and their families reported

the lesions had healed. One patient was dropped from the study early, because of adverse reaction to medication.

STUDY: DESCRIPTION/PROTOCOL

- 102 nonselected subjects, with initial bacteriology as follows: 77% *Staphylococcus aureus*, 9% mixed *Staphylococcus aureus* and *Streptococcus pyogenes*, and 1% beta-hemolytic *Streptococcus*.†
- All patients were given randomized therapy—Tegopen capsules or oral solution, or penicillin V-K tablets or oral solution, in recommended dosages according to body weight.

- All patients were evaluated after one week's therapy. If there was no improvement, therapy was switched to the other antibiotic. The "other antibiotic" proved to be Tegopen 100% of the time because no treatment failures had occurred with Tegopen.
- A final assessment of progress was made two weeks after initiation of Tegopen therapy.

†The remainder, to equal 100%, consisted of 14 patients (13%) who exhibited no initial bacterial growth. These 14 were all healed, whether given Tegopen or penicillin V-K.

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WARNING:

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There have been well documented reports of individuals with a history of penicillin hypersensitivity reactions who have experienced severe hypersensitivity reactions when treated with a cephalosporin. Before therapy with a penicillin, careful inquiry should be made concerning previous hypersensitivity reactions to penicillins, cephalosporins, and other allergens. If an allergic reaction occurs, the drug should be discontinued and the patient treated with the usual agents, e.g., pressor amines, antihistamines, and corticosteroids.

Safety for use in pregnancy has not been established.

PRECAUTIONS:

The possibility of the occurrence of superinfections with mycotic organisms or other pathogens should be kept in mind when using this compound, as with other antibiotics. If superinfection occurs during therapy, appropriate measures should be taken.

As with any potent drug, periodic assessment of organ system function, including renal, hepatic, and hematopoietic, should be made during long-term therapy.

ADVERSE REACTIONS:

Gastrointestinal disturbances, such as nausea, epigastric discomfort, flatulence, and loose

stools, have been noted by some patients. Mildly elevated SGOT levels (less than 100 units) have been reported in a few patients for whom pretherapeutic determinations were not made. Skin rashes and allergic symptoms, including wheezing and sneezing, have occasionally been encountered. Eosinophilia, with or without overt allergic manifestations, has been noted in some patients during therapy.

USUAL DOSAGE:

Adults: 250 mg. q 6h.

Children: 50 mg./Kg./day in equally divided doses q 6h. Children weighing more than 20 Kg. should be given the adult dose. Administer on empty stomach for maximum absorption.

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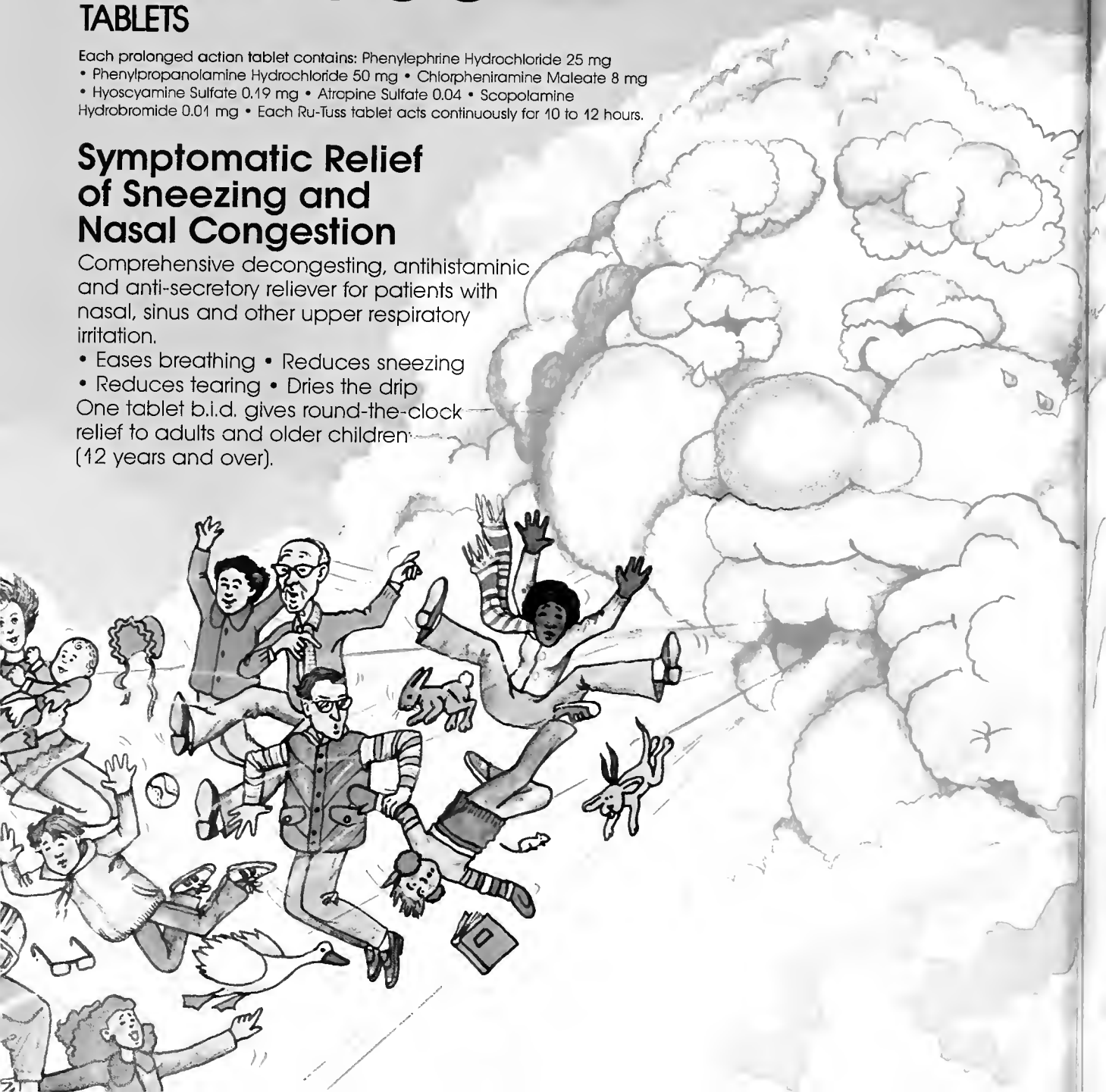
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Hyascyamine Sulfate	0.19 mg
Atropine Sulfate	0.04 mg
Scopolamine Hydrobromide	0.01 mg

Ru-Tuss Tablets act continuously for 10 to 12 hours

Ru-Tuss Tablets are an oral antihistaminic, nasal decongestant and anti-secretory preparation.

INDICATIONS AND USAGE Ru-Tuss Tablets provide relief of the symptoms resulting from irritation of sinus, nasal and upper respiratory tract tissues. Phenylephrine and phenylpropanolamine combine to exert a vasoconstrictive and decongestive action while chlorpheniramine maleate decreases the symptoms of watering eyes, post nasal drip and sneezing which may be associated with an allergic-like response. The belladonna alkaloids, hyoscyamine, atropine and scopolamine further augment the anti-secretory activity of Ru-Tuss Tablets.

CONTRAINDICATIONS Hypersensitivity to antihistamines or sympathomimetics. Ru-Tuss Tablets are contraindicated in children under 12 years of age and in patients with glaucoma, bronchial asthma and women who are pregnant. Concomitant use of MAO inhibitors is contraindicated.

WARNINGS Ru-Tuss Tablets may cause drowsiness. Patients should be warned of the possible additive effects caused by taking antihistamines with alcohol, hypnotics, sedatives or tranquilizers.

PRECAUTIONS Ru-Tuss Tablets contain belladonna alkaloids, and must be administered with care to those patients with glaucoma, or urinary bladder neck obstruction. Caution should be exercised when Ru-Tuss Tablets are given to patients with hypertension, cardiac or peripheral vascular disease or hyperthyroidism. Patients should avoid driving a motor vehicle or operating dangerous machinery (See Warnings).

OVERDOSAGE Since the action of sustained release products may continue for as long as 12 hours, treatment of overdoses directed at reversing the effects of the drug and supporting the patient should be maintained for at least that length of time. Saline cathartics are useful for hastening evacuation of unreleased medication. In children and infants, antihistamine overdosage may produce convulsions and death.

ADVERSE REACTIONS Hypersensitivity reactions such as rash, urticaria, leukopenia, agranulocytosis, and thrombocytopenia may occur. Other adverse reactions to Ru-Tuss Tablets may be drowsiness, lassitude, giddiness, dryness of the mucous membranes, tightness of the chest, thickening of bronchial secretions, urinary frequency and dysuria, palpitation, tachycardia, hypotension, hypertension, faintness, dizziness, tinnitus, headache, incoordination, visual disturbances, mydriasis, xerostomia, blurred vision, anorexia, nausea, vomiting, diarrhea, constipation, epigastric distress, hyperirritability, nervousness, dizziness and insomnia. Large overdoses may cause tachypnea, delirium, fever, stupor, coma and respiratory failure.

DOSAGE AND ADMINISTRATION Adults and children over 12 years of age, one tablet morning and evening. Not recommended for children under 12 years of age. Tablets are to be swallowed whole.

HOW SUPPLIED

Bottles of 100 Tablets

Bottles of 500 Tablets

Federal law prohibits dispensing without prescription

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Expectorant

DESCRIPTION

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Phenylpropanolamine Hydrochloride
Pheniramine Maleate
Pyrimamine Maleate
Ammonium Chloride
Alcohol

Ru-Tuss Expectorant is an oral antitussive, antihistaminic, nasal decongestant and expectorant preparation.

INDICATIONS AND USAGE Ru-Tuss Expectorant is indicated for symptomatic relief of respiratory congestion associated with pharyngitis, tracheitis, bronchitis, and allergies. Also, for the temporary relief of symptoms associated with hay fever, allergic congestion and cough due to the common cold.

CONTRAINDICATIONS Hypersensitivity to antihistamines. Concomitant use of hypertensive or antidepressant drug containing a monoamine oxidase inhibitor is contraindicated.

Ru-Tuss Expectorant is contraindicated in patients with glaucoma, bronchial asthma, in women who are pregnant.

WARNINGS Ru-Tuss Expectorant contains codeine phosphate, therefore, the patient should be warned of the potential that this drug may be habit forming. Ru-Tuss Expectorant may cause drowsiness. Patients should be warned of the possible additive effect of taking antihistamines with alcohol, hypnotics, sedatives and tranquilizers.

PRECAUTIONS Patients taking Ru-Tuss Expectorant should avoid driving a motor vehicle or operating dangerous machinery (See Warnings). Caution should be taken with patients having hypertension, diabetes, hyperthyroidism and cardiovascular disease.

Caution should also be used in patients with pulmonary, hepatic or renal insufficiency.

ADVERSE REACTIONS Ru-Tuss Expectorant may cause drowsiness, lassitude, dryness of mucous membranes, tightness of the chest, thickening of bronchial secretions, urinary frequency and dysuria, palpitation, tachycardia, hypotension/hypertension, dizziness, tinnitus, headache, incoordination, visual disturbances, mydriasis, stomia, blurred vision, anorexia, nausea, vomiting, diarrhea, constipation, epigastric distress, hyperirritability, nervousness, and insomnia. Overdoses may cause restlessness, excitation, delirium, tremors, euphoria, metabolic acidosis, stupor, tachycardia, convulsions.

DOSAGE AND ADMINISTRATION Adults: 1 or 2 teaspoonfuls, orally, every 4 hours, not to exceed 10 teaspoonfuls in any 24-hour period.

Children 6 to 12 years of age: ½ the adult dose, not to exceed 6 teaspoonfuls in any 24-hour period. Children 2 to 6 years of age: ¼ teaspoonful every 4 hours, not to exceed 3 teaspoonfuls in any 24-hour period. Children under 2 years of age, use only as directed by a physician.

HOW SUPPLIED: (16 fl. oz.)

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PRESIDENT'S NEWSLETTER

NORTH CAROLINA MEDICAL SOCIETY

NO. 8

JANUARY 1982

Dear Colleagues:

Once again the news has to do with Medicaid - but it is good news! As you are all well aware the "18 Visit Limit" levied in the October 1, 1981 Appropriations Act was destined to have serious - even fatal - effect on some North Carolinians afflicted with such diseases as End Stage Renal Disease, malignancies and other critical conditions. Both Barbara D. Matula (Director, Division of Medical Assistance) and Sarah T. Morrow, M.D. understand the critical needs of these unfortunate patients. Through their understanding efforts, with our urging, they were able to reach the Advisory Budget Commission of the Legislature concerning certain exemptions from the "18 Visit Limit". Every member of the North Carolina Medical Society is indebted for their loyalty to Medicine, in the face of ever increasing obstacles. A memorandum written by Barbara D. Matula on November 25, 1981 states:

"The Legislature has clarified its intent to exclude the following illnesses/procedures from the 18 visit limit:

- *1. End Stage Renal Disease
- *2. Chemotherapy and Radiation Therapy for malignancy
- *3. Acute Sickle Cell Disease
- 4. End Stage Lung Disease
- 5. Unstable Diabetes
- *6. Hemophilia
- 7. Terminal Stage - any illness - life threatening

Those marked with an * can probably pass through the system automatically. The others should be reviewed prior to payment. Instructing the physician to code the claim in a special way for [Numbers] 4, 5 and 7, so that they will automatically 'except' for review might be a good way of doing this. (Ed. note: Watch your next MEDICAID BULLETIN for instructions!) These exceptions should be implemented immediately." (emphasis added)

For the entire summer we have all been informed through the media that there is a crisis concerning Health Insurance for State Employees. The mounting costs of modern medical technology have greatly increased the premium costs of this health insurance to the State, in an alarming manner. Several months ago, I obtained a copy of the "Executive Summary - Report to the Committee on Employee Hospital and Medical Benefits on Alternate Funding Methods and Health Cost Containment". I distributed copies to some members of the Medical Society's Leadership and discussed it with all who would listen, between meetings at the Committee Conclave in September. For the past month, the State's "Committee" has seriously attacked the matter and has held "hearings" with various interested groups, including insurance companies and computer corporations. On Tuesday, December 29, 1981, James E. Davis, Joseph D. Russell, Don Chaplin and I will meet with the State's Committee to discuss physician concerns. (Since this NEWSLETTER's deadline is December 28, I shall discuss the outcome of this meeting in the next epistle!)

The State employed a consulting firm to advise them as to the future of the State Employees' Health Insurance. The Consulting firm, William M. Mercer, has recommended a

self-insured plan - an "Administrative Services Only (ASO)" plan. Such a plan would allow the State to contract with a carrier, acting as an administrator or another third party to pay claims on its behalf. The Mercer firm states that there would be an estimated cash flow savings of \$26,000,000 (26M) in the first two years of the program and its report states: "An ASO arrangement will give the Committee the maximum flexibility in selecting the lowest cost ancillary services, instituting plan design changes and implementing cost containment programs."

The ASO plan recommended by the Mercer Company includes the following features (among many others):

1. Increase "major medical coverage to \$1,000,000 (\$1M)".
2. Implement a deductible of \$50 to be applied to all hospitalizations, including emergency care.
3. Establish strict utilization and cost controls.
4. Reimburse physicians "at less than 100% of usual, customary and reasonable charges". (Fee schedule)
5. Implement mandatory second surgical opinion for six frequently performed surgical procedures and elective second opinion for the remainder of elective surgical procedures.
6. Pay 100% for seven selected surgical procedures when performed on an outpatient basis, but only 80% for those procedures when performed in a hospital unless the physician can specifically justify inpatient surgery.
7. Include coverage for approved ambulatory surgical centers.
8. Provide full payment for six prenatal and three postnatal doctor visits.
9. Require a Pre-admission Testing Program.
10. Provide coverage for up to 10 home health care visits following a hospital admission.
11. Target hypertension, cardiovascular disease and diabetes for screening and prevention.
12. Develop a readable employee benefits handbook, including a discussion of hospice care and prepaid health plans.
13. Authorize the carrier to develop tight claim administration controls, denying payment for procedures and hospital stays of questionable necessity. The report states: "Negotiate reasonable targets for reducing hospital days per thousand and share the savings with the carrier." (emphasis added)
14. Implement Coordination of Benefits savings targets.
15. Implement prospective, concurrent and retrospective claim review.

As you see, there are many areas of concern to physicians and to our patients in this report. I am told that the State is the largest employer in North Carolina and, therefore, any decision on this matter will directly affect a large segment of the population. Please watch the media reports and bulletins which may be issued from the North Carolina Medical Society. Let your opinions, thoughts and concerns be known to me and others who might help us maintain quality health care for all North Carolinians.

The first six months of my administration has been most rewarding. So many of you responded to my plea that you "participate". Every one of your responses to the PRESIDENT'S NEWSLETTER is deeply appreciated and, so far, I have been able to answer every single letter which I have received. Each month the number of your responses increases, indicating your sincere interest in the many complex problems facing organized medicine. Keep 'em coming! The North Carolina Medical Society MUST represent the views and beliefs of the membership! The Society needs your active interest.

I pray that the New Year will bring you and yours the greatest happiness, good health and prosperity which you so deserve!


Josephine E. Newell, M.D.
President



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*Based on review of PDR for Nonprescription Drugs 1981 and Handbook of Nonprescription Drugs, 6th ed. 1979



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Among the Metamucil users who expressed a preference, 77.8% (14/18)* preferred BranLax overall, effectiveness of BranLax was favored by 83.3% (10/12),* taste was preferred by 72.2% (13/18)† and the convenience of preparing BranLax was favored by 71.4% (10/14)†.



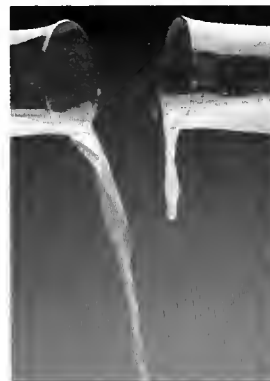
Among the general study population who expressed a preference, 59.6% (31/52)† preferred BranLax overall, effectiveness of BranLax was favored by 57.6% (19/33),† taste was preferred by 58.8% (30/51)† and convenience of preparing BranLax was favored by 62.5% (20/32).†

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*Kitt, D.P. and Meisner, P.: How to manage constipation with a high-fiber diet, *Geriatrics* 34:33-40, Feb. 1979.
†Statistically significant at the .05 level.
‡While this difference is not statistically significant, there was a definite directional superiority in favor of BranLax.
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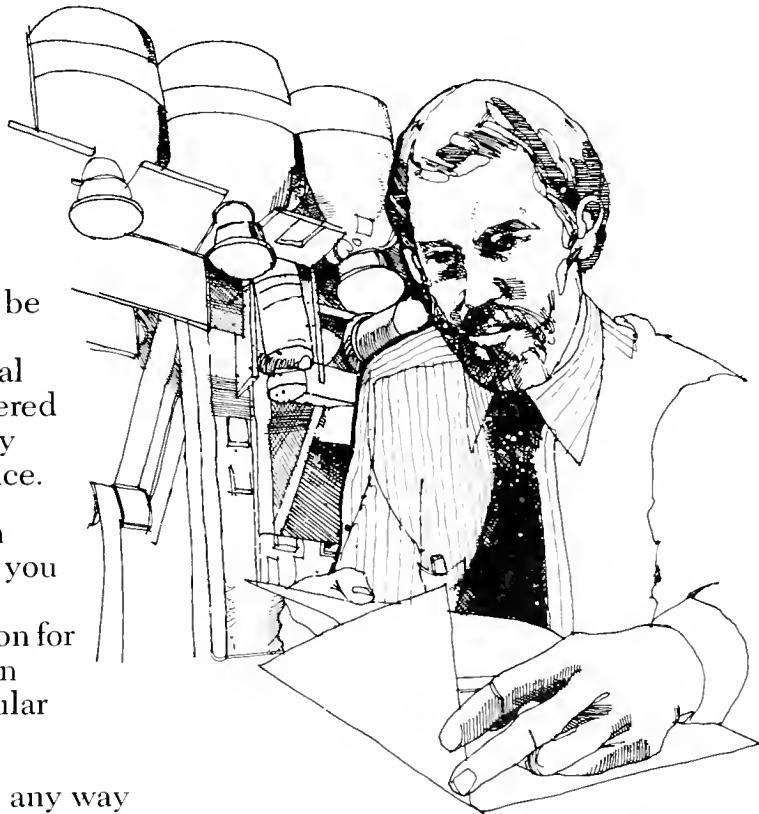
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Strongyloidiasis: A Presentation of 63 Cases

Richard A. Davidson, M.D., M.P.H.

ABSTRACT Strongyloidiasis is an important infection in the more temperate areas of the United States, particularly in patients who are immunosuppressed and therefore susceptible to hyperinfection. Additionally, the organism is reasonably common. Sixty-three patients with strongyloidiasis were surveyed in a search for factors associated with the infection. Sixty-five percent of the patients had notable gastrointestinal complaints; 16% had skin rashes. Forty-four percent had peptic ulcer disease; 22%, active tuberculosis; 22%, prior gastric surgery; and 11%, upper gastrointestinal diverticuli. Forty-nine patients (85%) had eosinophils greater than 5% by peripheral blood smear. Strongyloidiasis should be considered in patients with abdominal pain and/or skin rash coexisting with active tuberculosis and upper gastrointestinal diverticula and in patients with peptic ulcer disease who have continued pain after adequate medical or surgical treatment. In immunosuppressed patients, unexplained abdominal complaints or sepsis should suggest this infection.

STRONGYLOIDES stercoralis is an intestinal nematode that is an occasional cause of morbidity in this country, especially in the temperate zones.^{1,2} Under certain conditions (the "hyperinfection" syndrome) it may cause death; it also has recently been described as an opportunistic pathogen.³ Since the development of thiabendazole, a relatively effective means of eradicating this parasite has been available.^{4,5} However, as with many other uncommon infections, diagnosis depends upon consideration in the differential diagnosis. Since there are no pathognomonic signs or symptoms, delineation of predisposing or coexisting factors could increase the recognition of this infection. Most of the reviews of strongyloidiasis have been concerned with small numbers of cases; this study describes the disease in 63 patients and evaluates possible predisposing and coexisting factors.

MATERIALS AND METHODS

Sixty-three cases from the files of the Nashville Veterans Administration Medical Center (NVAMC) between 1968 and 1979 were studied. Inclusion in the series was based upon a positive stool examination for *S. stercoralis*. The clinical records were reviewed for gastrointestinal signs and symptoms, skin eruptions, skin test results, laboratory findings, coexisting diseases and procedures.

RESULTS

Patient characteristics. All patients were white males. The average age was 51.7 years. Twelve patients had served overseas in the military. There was no evidence of temporal clustering of cases by year.

Signs and Symptoms. Forty-one patients (65%) had gastrointestinal complaints, most frequently epigastric pain, bloating and diarrhea. Weight loss and pulmonary signs and symptoms were frequently related to tuberculosis, but were also seen in non-tuberculous patients. Ten patients (16%) had skin rashes,

either urticarial, maculopapular, or both.

Pertinent laboratory findings. The white blood cell count and hematocrit reflected alterations due to underlying diseases only, i.e., renal failure, concurrent infection, sideroblastic anemia or GI bleeding. In uncomplicated *S. stercoralis* infections, total white blood cell counts and hematocrit values were within the normal range. Forty-nine of 57 patients (85%) had recorded eosinophil counts of more than 5%; three of the remaining eight were taking corticosteroids. The range of eosinophil percentages was 0-50, with a mean of 13.0.

Coexisting diseases. Diseases present in the 63 *Strongyloides* patients are recorded in Table I. The high incidence of tuberculosis among the cases was unexpected. Twenty-two percent had active tuberculosis; an additional eight patients (13%) had positive tuberculin skin tests without bacteriologic evidence of active disease. As with the distribution of the *Strongyloides* patients, there was no temporal clustering of tuberculosis patients.

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Table I. Coexisting Disease in 63 Patients with *Strongyloides* Infection

	Patients	Percent
Peptic ulcer disease	28	44
Active tuberculosis	14	22
Positive PPD, negative cultures	8	13
Chronic obstructive lung disease	9	14
Laennec's cirrhosis	6	10
Ischemic heart disease	5	8
Renal allograft	4	6
Carcinoma of the lung	2	3
Lymphoma	2	3

Trauma, diabetes mellitus, sideroblastic anemia, histoplasmosis, Parkinson's disease, thyrotoxicosis, syphilis, schizophrenia, and carcinoma of the prostate occurred once.

Forty-four percent of the *Strongyloides* patients were diagnosed as having peptic ulcer disease, all on the basis of radiographic studies. Four *Strongyloides* patients (6%) had renal allografts and were taking immunosuppressive medications at diagnosis; the "hyperinfection" syndrome was present in two of these patients. Two patients with pulmonary disease and one with lymphoma were taking corticosteroids. Mixed parasitic infections were present in four patients: two with hookworm, one with *Giardia*, and one with *Entamoeba histolytica*.

Only two patients were admitted with the diagnosis of strongyloidiasis. Two were diagnosed and treated as outpatients; the remainder were hospitalized, usually for gastrointestinal complaints, although four cases were evaluated because of asymptomatic eosinophilia.

Surgery. Table II shows previous surgery in these patients. Twenty-two percent had had gastrectomies, but only one of the 14 tuberculous patients had had a gastrectomy.

Table II. Prior Surgical Procedures in 63 Patients with *Strongyloides* Infection

Procedure	Patients	Percent
Gastric Surgery	14	22
Billroth I	6	9.5
Billroth II	6	9.5
BI + BII	2	3
Herniorrhaphy	7	11
Appendectomy	6	9.5
Cholecystectomy	3	5

Anatomic abnormalities. Seven patients (11%) had upper gastrointestinal diverticula: five duodenal, one gastric, and one both jejunal and duodenal. However, only 63% of the cases had upper gastrointestinal radiographic studies. Colonic diverticuli were present alone in four cases and in combination with duodenal diverticula in two cases. One patient, reported elsewhere,³ with a post-gastrectomy blind loop and a renal transplant, required surgical placement of a tube to deliver high concentrations of thiabendazole to the loop before the infection was controlled.

DISCUSSION

Although strongyloidiasis is most often a mild illness, potentially severe complications may occur when rhabditiform larvae, which are normally passed in the stool, metamorphose into infective, filariform larvae in the gastrointestinal tract. While penetrating the gut, large numbers of filariform larvae may carry enteric bacteria with them, causing sepsis. Paralytic ileus,⁶ prostration and death⁷⁻¹⁵ are common in this "hyperinfection" stage. The colon, liver, pleural fluid and central nervous system may be invaded by larvae, which also may be seen in sputum and urine.

It is likely that filariform larvae penetrate the gut wall or the perianal skin on a smaller scale in many individuals without "hyperinfection," and that this "autoreinfection" plays a role in maintaining this infection for many years. The factors that predispose to this occurrence are not known. However, several conditions were frequent in this series: active tuberculosis (22%), gastrectomy (22%), gastrointestinal diverticula (11%), and peptic ulcer disease (48%). In order to evaluate a possible disease bias among the hospital population, diagnoses and prior gastric surgery were evaluated in a group of 50 randomly selected (but unmatched) patients with negative stool exams. The resultant percentages (active tuberculosis 8%, peptic ulcer disease 30%, prior gastric surgery 10%) were lower than in the study population. Additionally, over the same 10-year period, active

tuberculosis patients made up only 0.75% of admissions. These disparities suggest a more thorough case control study is in order.

These excesses are hypothetical because of the strong possibility of temporal bias within the comparison group. Additionally, other methodologic inadequacies may be present. In the case of active tuberculosis, for example, a detection bias exists in that the length of hospitalization for tuberculosis patients was longer than for the average admission (46.1 days versus 17.5 days in 1975); this, of course, makes the detection of an intermittently symptomatic illness like strongyloidiasis more likely. Other factors, such as rural residence or poverty, might increase susceptibility or exposure to both strongyloidiasis and tuberculosis. Finally Berkson¹⁶ has suggested that associations between disease observed in hospitalized patients may be misleading because the hospitalized population is selected by virtue of the presence of more than one disease; this implies that the hospital population is not representative of the population at large.

In spite of these factors, mechanisms for such an association may exist. Purtilo¹¹ noted one patient with both diseases. Palmer¹⁷ postulated the activation of quiescent tuberculosis by pulmonary migration of *Strongyloides*, and Marcial-Rojas⁴ suggested that a common immune defect might be responsible. The ability of active tuberculosis to provoke anergy, ostensibly through depletion of T-cells, and the association of *Mycobacterium leprae* with strongyloidiasis lend support to this hypothesis. There appear to be a number of defects caused by leprosy,¹⁸ including a reduction of lymphocytes in the peripheral blood¹⁹ and the thymus-dependent areas of lymph nodes,²⁰ and prolonged survival of skin grafts.²¹ The possibility exists that a similar unrecognized defect may occur in patients with tuberculosis that may favor long term survival of *Strongyloides* in the gut.

A high prevalence of ulcer disease in *Strongyloides* patients has been previously noted.²² Patients with abdominal pain from ulcer disease might have stools evaluated more

frequently than other patients, again causing a detection bias. Additionally, chronic *Strongyloides* infections may cause duodenal radiographic abnormalities²³ and pain, and thus be diagnosed incorrectly as ulcer disease. Dias⁷ described gastric pain and duodenal ulcerations with parasitic invasion at the base of the ulceration. Should such patients not improve with antacid therapy, they could become surgical candidates. A third possibility relates to the "acid barrier" to infections with gastrointestinal ports of entry.²⁴ Cases of coexistent hypochlorhydria and strongyloidiasis have been frequently reported^{22,25,26} and it has been suggested that hypochlorhydric patients may be more heavily infected, and that the gastric mucosa might be more susceptible to invasion in such individuals.^{24,26} The presence of a "surgical hypochlorhydria" in more than 20% of the present series of patients raises the possibility that such procedures might favor persistence of this infection by allowing the parasites a less hostile environment on their passage through the upper gastrointestinal tract.

Anatomic malformations, such as diverticuli or blind loops, would logically appear to favor persistence of intestinal infections, by providing an "aperistaltic haven" for parasites and bacteria. However, although mentioned occasionally in the literature,³ these conditions apparently have not been assessed to determine patients at risk of developing or maintaining infections with *S. stercoralis*. It is of

interest, therefore, that seven of the present series (of 40 with a complete upper GI series) had upper gastrointestinal diverticula; a prevalence of 2.3% has been noted in all patients with gastrointestinal disease.²⁷

It is important to recognize that negative stools do not rule out this infection. Jones²² found that 20 of 100 patients with strongyloidiasis who had more than five negative stool exams had positive duodenal aspirates. Six patients had positive stools and negative aspirates. Thus, if infection is suspected, duodenal aspirates should be obtained even if stools are negative. Enterotest,[®] an encapsulated string that is swallowed by the patient, then withdrawn, may also prove useful in the diagnosis of this infection.²⁸

Case reviews are not appropriate tools for answering questions covering associations between disease; rather, they provide baseline data on which to base hypotheses. A case-control study evaluating more carefully such associations is being planned. However, the observations in the present series of patients may prove useful in certain clinical situations. Patients from temperate climates who fail to respond to standard peptic ulcer regimens, who continue to have pain after gastrectomy, or who develop gastrointestinal symptoms or a skin rash in association with tuberculosis should be evaluated for the possibility of strongyloidiasis.

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OLIVER WENDELL HOLMES [1809-1894]

The most essential part of a student's instruction is obtained, as I believe, not in the lecture room, but at the bedside. Nothing seen there is lost; the rhythms of disease are learned by frequent repetition; its unforeseen occurrences stamp themselves indelibly in the memory.

Medical Essays, "Scholastic and Bedside Teaching"

Sleep Disorders

Part III: Insomnias and Parasomnias

J. Ingram Walker, M.D.

INSOMNIAS are characterized by the sensation of poor sleep; the parasomnias include those conditions in which indescribable physical activities appear in sleep.

INSOMNIA

Approximately 15% of the population complain of insomnia.¹ Insomnia — a complaint, not an illness — is characterized by the sensation of an inadequate quantity or quality of sleep. More specifically, insomnia includes the complaint of difficulty going to sleep, multi-awakenings during the night, or early morning arousals from which it is difficult to return to sleep. The most common conditions causing insomnia will be discussed.

Transient and Situational Insomnia

Transient insomnia, defined as a sleep disturbance lasting less than three weeks, can result from an unfamiliar sleep environment, emotional shock, death of a loved one, divorce or a job change.² Intense positive emotions can also produce transient insomnia as can medical or toxic conditions.

Persistent Insomnia

After a few weeks of poor sleep, whether due to stress, anxiety, or transient environmental conditions, insomnia can develop into a conditioned response that may persist

for decades. An individual who has difficulty falling asleep because of a transient stressful situation may learn to associate the simple process of going to bed and turning off the light with frustration and sleepiness. The harder the individual tries to go to sleep the more difficult it becomes. Conditioned insomnia can be suspected when an insomniac describes sleeping better on vacation or away from his usual bed.³

To break the insomniac's negative thought pattern associated with sleep, the patient can be encouraged to sleep in another bed and preferably in another room. The patient should be asked to arise at a fixed time each morning no matter how sleepy and tired he is. Daytime naps should be strictly prohibited. The patient should go to bed only when sleepy; if the patient fails to go to sleep five to ten minutes after getting into bed, the patient should get out of bed and return only when sleepy.⁴ Relaxation techniques may help some individuals.⁵

Insomnia Associated with Anxiety and Personality Disorders

Sleep onset insomnia and difficulty in maintaining sleep can be related to generalized anxiety, panic, phobias, hypochondriasis and compulsive personality.² In these conditions insomnia seems to result from attempts to control anxiety. This condition should be diagnosed when there is evidence of longer than three weeks' duration of insomnia and an unequivocal psychiatric condition.

Insomnia Associated with Affective Disorders

The clinician, when he hears reports of early morning waking, should always look for other symptoms of depression.⁶ A depressed patient complains of lack of energy, diminished appetite, constipation, decreased sex drive, and a diminished interest in usual activities. Patients complain of feelings of hopelessness and helplessness and they may have suicidal thoughts.

Mildly depressed patients may complain of nothing but vague somatic sensations, such as feelings of heaviness, fullness, dizziness, or being tired and rundown. In these cases the physician should vigorously seek other symptoms of depression, especially if the patient complains of early morning awakening. Occasionally, after a thorough physical examination has ruled out physical causes for the patient's complaints, the patient may be given a sedating tricyclic antidepressant such as amitriptyline. A clinical response after 10 to 14 days to therapeutic doses (generally 150 mg), confirms the diagnosis of depression.

Individuals with an elevated, expansive, or irritable mood that is characteristic of a manic episode, will have a decreased need for sleep.⁷ The individual may have difficulty going to sleep or awaken several hours before the usual time, full of energy. With a full-blown manic episode, the individual may go for days without sleep and yet not feel tired. A manic episode is marked by a triad

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of features: elevated mood, hyperactivity and pressure of speech. Manic individuals manifest an increase in activity, distractibility, and involve themselves in activity that may be self-damaging, such as buying sprees, sexual indiscretions, reckless driving and foolish business ventures.

Insomnia Associated with Schizophrenic Disorders

Individuals in the acute states of schizophrenic psychosis (marked by delusions, auditory hallucinations, and illogical thinking) may have disturbed sleep because of the general turmoil generated by the illness.⁸ Acute schizophrenics generally have difficulty going to sleep and have fragmented sleep during the early part of the night; once they settle into sleep they may not awaken until midday.² On the other hand, those individuals with chronic schizophrenia (characterized by deterioration in self-care, work performance and social relations) sleep surprisingly well,⁸ although they may complain of poor sleep.²

Insomnia Associated with Drug and Alcohol Abuse

Alcohol and sedative-hypnotics lose their pharmacological effects on sleep in two weeks, producing a tendency for patients to raise the dose in order to initiate sleep.² During chronic use of alcohol or a sedative-hypnotic agent, sleep is marked by frequent awakening. Rapid reduction of hypnotics or alcohol produces disrupted sleep patterns with rebound of rapid eye movement (REM) sleep.⁵

The amphetamines, barbiturates, benzodiazepines, tricyclic antidepressants and monoamine oxidase (MAO) inhibitors interfere with REM sleep.⁹ These drugs initially cause suppression of REM sleep, followed by a gradual return to normal REM levels and a rebound increase in REM sleep on drug withdrawal. Some MAO inhibitors, such as phenelzine (Nardil), are able to cause a complete and sometimes prolonged suppression of REM sleep.¹⁰

Sustained Use of CNS Stimulants

Insomnia secondary to stimulants, such as amphetamines and caffeine,

is characterized by delayed sleep onset, a decline in total sleep time and decreased sleep stages three/four and REM reduction.² The poor nocturnal sleep results in daytime grogginess and the tendency to take more stimulant drugs. Caffeine is found in a variety of preparations:¹¹

Fresh brewed coffee — 125 mg per cup
Instant coffee — 90 mg per cup
Decaffeinated coffee — 2 mg per cup
Fresh brewed tea — 70 mg per cup
Instant tea — 45 mg per cup
Colas — 50 mg per 8 oz

Nocturnal Myoclonus

Insomnia may be related to nocturnal myoclonus, a neuromuscular abnormality that causes sudden repeated contractions of the leg muscles during sleep. Because the condition may cause only partial awakening, patients themselves are rarely aware of their leg movements; instead, they typically complain of broken sleep or unrefreshing sleep. The bed partner can usually describe the disturbance in full detail. The jerks typically last from 0.5 to 10 seconds and occur every 20-40 seconds in episodes that last from a few minutes to more than an hour.¹²

Nocturnal myoclonus may be associated with chronic uremia and other metabolic disorders. Some patients with narcolepsy also have myoclonic episodes as do some patients treated with tricyclic antidepressant medications. Withdrawal from anticonvulsants, benzodiazepines and sedative hypnotics can also produce nocturnal myoclonus. Nocturnal myoclonus should be distinguished from "hypnic jerks" — a generalized body twitch commonly occurring in the transition to sleep.²

Nocturnal myoclonus occurs most often in middle-aged and older people. The incidence of nocturnal myoclonus among serious insomniacs ranges from 1% to 15%.¹² Although there is no adequate treatment for idiopathic nocturnal myoclonus, diazepam seems to diminish the severity of the myoclonic jerks.⁵

Restless Legs Syndrome

A condition closely related to

nocturnal myoclonus, restless legs syndrome, generally occurs before one falls asleep. Disagreeable but rarely painful creeping sensations deep inside the calf and occasionally in the thighs and feet cause an almost irresistible urge to move the legs.

Restless legs syndrome has been associated with motor neuron disease, chronic uremia and deficiencies in iron, calcium or vitamin E. About one-third of patients with restless legs syndrome have a familial pattern suggesting that the condition is probably transmitted as an autosomal dominant trait with reduced penetrance.¹³

Treatment of the restless legs syndrome involves removing the cause if possible. Diazepam can be used symptomatically.⁵ An adequate exercise program coupled with muscle relaxation techniques might be of some help.⁵

Medical, Toxic and Environmental Influences Contributing to Insomnia

Any disorder that affects the balance between the neurological wake/sleep systems can cause sleep disturbances. These conditions include spinal cord, subcortical or cortical lesions, brain traumas, infections, and degenerative conditions.⁵ Epilepsy, in some cases, can be aggravated by sleep. In some cases, seizures occur exclusively during sleep. Gibberd and Bateson¹⁴ reported 38 individuals (6%) in a sample of 645 epileptic patients who had seizures exclusively during sleep. Some of these individuals complained about poor sleep while others had intermittent enuresis.

Abnormal thyroid function leads to sleep disturbances. Hyperthyroidism produces short, interrupted sleep with excessive amounts of delta sleep.⁵ Sleep periods return to normal gradually after successful treatment of thyrotoxicosis; it may take up to a year before normal sleep patterns are achieved.¹⁵ Hypothyroidism, on the contrary, causes excessive sleepiness with a lack of deep sleep. After hypothyroidism is treated, sleep gradually returns to normal.⁵

Almost any medical disturbance, either directly or through the ac-

accompanying pain and malaise, can cause insomnia. Fever has been demonstrated to cause fragmented sleep and reduce delta sleep and REM sleep. Asthma, angina, emphysema, uremia, sudden weight loss and many neuromuscular disorders can produce insomnia. A detailed medical evaluation is essential to evaluate sleep disturbance properly.⁵

Subjective Insomnia

An individual with subjective insomnia complains of insomnia but on careful observation in a sleep laboratory or by a hospital staff is found to sleep quite well. Individuals with hypochondriacal insomnia will be totally preoccupied with their sleep patterns. These patients can be effectively managed by frequent and regular office visits, whereby the physician attempts to offer the patient a relationship rather than a cure. The physician can attempt to help the patient understand what life-time stresses can interfere with the patient's sleep and help the patient deal with those stressful situations more effectively.¹⁶

Insomnia Associated with Aging

Many elderly individuals are convinced that they have insomnia because they feel they should be sleeping as much as in former years. With aging, sleep efficiency is decreased. Some investigators have found that aging is usually associated with decreased sleep time, increased number of awakenings during the night, a decrease in delta sleep and a decrease in REM sleep.¹² Merely informing some elderly patients that sleep requirement decreases with age may help them adjust to their misperception of sleep requirement. Depression should always be considered in the differential diagnosis of insomnia in the elderly.

Another condition that should be seriously considered in the elderly patient complaining of insomnia is "the sundown syndrome." These episodes frequently occur in patients with mild to moderate organic brain syndrome who function fairly well during the daytime, but as night-fall diminishes the environmental cues they become confused, dis-

oriented or agitated and have difficulty sleeping.¹⁷ Delusions and hallucinations may also be present. The treatment for this condition is an antipsychotic medication. Haloperidol 1-2 mg orally in the evening is the drug of choice because of low cardiovascular side effects.¹⁶

PARASOMNIAS

Somnambulism (Sleepwalking)

Sleepwalking is initiated in the first third of the night during delta sleep (stages 3/4) and progresses without full consciousness to leaving the bed and walking about.² Coordination is poor and the individual is likely to stumble or lose balance. Despite open eyes, the patient's expression is blank or dazed. Sleepwalking in children generally takes a self-limited benign course, while in adults sleepwalking is associated with personality disturbance or other psychopathology. Sedative-hypnotics increase sleepwalking in predisposed individuals.² Although there is no specific treatment for somnambulism it is useful to make the house free of dangerous objects and places to fall. The benzodiazepines may be helpful in some cases.¹²

Sleep Terror

Sleep terror, also known as pavor nocturnus or incubus, is a sudden arousal from delta sleep (stage 3/4) associated with extreme panic.² Typically, in the first third of the night the individual sits up in bed and displays a frightened expression, dilated pupils, profuse perspiration, piloerection, rapid breathing and quick pulse. The individual fully awakes 5-10 minutes later; there may be a sense of terror and isolated

visual imagery prior to arousal, but rarely a vivid dream. Most frequently there is amnesia for the entire episode.

In contrast, dream anxiety attacks come during REM activity, occur in the middle or latter third of the night, and are associated with less confusion and sympathetic arousal than sleep terrors.² With dream anxiety attacks there is distinct recall of a detailed dream sequence in which a growing threat seems to lead to ultimate awakening (Table I).

Because the benzodiazepines suppress delta sleep, diazepam (5-20 mg at bedtime) is the drug of choice for sleep terror.¹² Nightmares, however, are more directly related to psychological conflicts, so that psychotherapy is the treatment of choice for this disorder.⁵

Enuresis

Enuresis, or bedwetting, usually occurs in the first third of the night during stage 3/4 sleep. Primary enuresis indicates that the individual has never been consistently dry since infancy. Secondary enuresis means that bedwetting has reappeared after a dry period. Primary enuresis suggests an organic or medical problem while secondary enuresis is more frequently related to psychological problems.⁵

Ten percent of all children at the age of seven wet their beds.⁵ In late latency approximately 5% of children occasionally wet their beds, while 1%-3% of men 18-20 sometimes wet their beds.¹² Among enuretic adults, 35% are schizophrenic.²

Although enuretic episodes can

TABLE I

	Sleep Terror	Dream Anxiety
Onset	Early in night	Late in night
Autonomic arousal	High	None
Dream recall	Usually absent; if present, it is on an isolated single hallucination	Excellent; vivid
Sensorium during attack	Confused	Lucid
State of sleep	III & IV	REM sleep
Etiology	Disorder of arousal	Emotional disturbance

Adapted from Walker JL: *Clinical Psychiatry in Primary Care*. Menlo Park, Calif., Addison-Wesley, 1981.

occur in any sleep stage, enuresis typically occurs in delta sleep in individuals who are characteristically extremely sound sleepers and difficult to wake up.² Similar to other arousal disorders, nocturnal enuresis occurs more frequently during stressful periods.²

Generally no specific treatment is necessary. Indeed too vigorous treatment may increase stress on the child and result in more bedwetting. Ignoring the problem may be the best treatment. Alternatively, numerous behavior modification techniques are available. Patients with other symptoms of emotional problems may benefit from psychotherapy. Imipramine in a dose less than 2 mg/kg carefully titrated may be quite effective in reducing enuretic episodes but the problem may re-

turn after the drug is discontinued. Imipramine is regarded as cardiotoxic and should be used cautiously.

SUMMARY

This series of articles has discussed the diagnosis and treatment of sleep dysfunction. Treatment for sleep disorders consists of more than prescribing a mild sedative or offering brief supportive psychotherapy. Appropriate treatment for sleep dysfunction can replace the potential for drug addiction with the possibility for sound sleep.

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WILLIAM HEBERDEN [1710-1801]

There has lately been established in several of the London hospitals, a plan of courses of lectures in all the branches of knowledge useful to a student of physic. Such plans, if rightly executed, as I have no reason to doubt they will be, must make London a school of physic superior to most in Europe. The experience afforded in an hospital will keep down the luxuriance of plausible theories. Many such have been delivered in lectures, by celebrated teachers, with great applause; but the students, though perfectly masters of them, not having corrected them with what nature exhibits in an hospital, have found themselves more at a loss in the cure of a patient than an elder apprentice of an apothecary.

Letter to Dr. Thomas Percival, October 15, 1794

Special Article

INTRODUCTION:

At one time the medical world was much concerned with fomes or fomites, objects not in themselves "corrupted" which can harbor and pass on pathogens. School children were cautioned to approach banisters with care and toilet seats could become objects of abject horror.

Naturally food handlers could become targets and elaborate measures to protect others from handlers and handlers from themselves were devised.

As information has accumulated, restrictions have become less severe and correspondingly less costly. Recently a working group of the World Health Organization (WHO) has es-

tablished guidelines for a strategy in the control of food hygiene. The description of the program which follows is reprinted from *Morbidity and Mortality Weekly Report*, June 12, 1981.

J.H.F.

Health Examination of Food Handlers—Europe

IN November 1979, a World Health Organization (WHO) working group met in Copenhagen, Denmark, to establish guidelines for examining food handlers as potential sources of foodborne disease and to formulate a new strategy for achieving an acceptable level of control of food hygiene.

At issue was the impact on public health of legal requirements in many countries that food handlers have a medical examination before being employed and at regular intervals thereafter. The working group objected to these requirements for

TABLE I. Summary — cases of specified notifiable diseases, United States
(Cumulative totals include revised and delayed reports through previous weeks.)

Disease	22nd Week Ending			Cumulative First 22 Weeks		
	June 6 1981	May 31 1980	Median 1976-1980	June 6 1981	May 31 1980	Median 1976-1980
Aseptic meningitis	91	73	63	1,489	1,336	873
Brucellosis	4	1	2	57	74	74
Chickenpox	6,104	5,875	5,301	142,556	127,008	129,124
Diphtheria	—	—	1	3	2	35
Encephalitis						
Primary						
(arthropod borne						
& unsp.)	16	16	12	299	250	250
Post infectious	1	2	7	39	79	83
Hepatitis, Viral						
Type B	332	360	260	8,135	6,830	6,345
Type A	477	470	551	10,546	11,259	12,361
Type unspecified	218	222	150	4,722	4,618	3,763
Malaria	26	48	8	541	700	206
Measles (rubeola)	247	616	1,272	2,000	9,629	17,293
Meningococcal infections						
Total	50	33	33	1,867	1,386	1,229
Civilian	50	33	33	1,861	1,376	1,216
Military	—	—	—	6	10	9
Mumps	111	165	418	2,352	5,826	10,143
Pertussis	17	17	17	417	454	454
Rubella (German measles)	94	233	371	1,336	2,466	8,780
Tetanus	—	1	1	19	24	24
Tuberculosis	576	511	508	11,139	10,930	11,781
Tularemia	5	3	3	65	49	49
Typhoid fever	6	10	10	190	150	150
Typhus fever, tick borne						
(Rky Mt. spotted)	54	24	25	256	168	145
Venereal diseases						
Gonorrhea						
Civilian	17,506	16,952	16,577	407,096	395,027	395,027
Military	670	462	465	11,959	11,413	11,413
Syphilis, primary & secondary						
Civilian	430	555	358	12,494	10,959	10,120
Military	7	5	5	153	142	131
Rabies in animals	160	201	68	2,982	2,837	1,286

TABLE II. Notifiable diseases of low frequency, United States

	Cum. 1981
Anthrax	—
Botulism (Calif. 1)	24
Cholera	1
Congenital rubella syndrome	4
Leprosy	—
(Calif. 3, Oreg. 3, Hawaii 4)	98
Leptospirosis (Hawaii 1)	17
Plague	4
Poliomyelitis	—
Total	—
Paralytic	—
Psittacosis	—
(Upstate N.Y. 2, Wis. 1, Calif. 2)	43
Rabies in man	—
Trichinosis (Calif. 1)	76
Typhus fever, flea borne	—
(endemic, murine) (Tex. 1)	11

All delayed reports and corrections will be included in the following week's cumulative totals.

TABLE III. Cases of specified notifiable diseases, United States, weeks ending June 6, 1981 and May 31, 1980 (22nd week)

Reporting Area	Hepatitis (Viral) by type													
	Encephallitis											Malaria		
	Aseptic Meningitis 1981	Brucel- losis 1981	Chicken pox 1981	Diphtheria		Primary		Post- infectious 1981	B	A	Unspecified	1981	Cum. 1981	
United States	91	4	6,104	—	3	16	16	1	332	477	218	26	541	
New England	2	—	1,039	—	—	2	—	—	13	5	10	1	26	
Maine	—	—	221	—	—	—	—	—	—	—	1	—	1	
N.H.	—	—	74	—	—	1	—	—	—	—	—	—	3	
Vt.	—	—	58	—	—	—	—	—	—	1	—	1	3	
Mass.	—	—	250	—	—	1	—	—	4	1	8	—	12	
R.I.	—	—	129	—	—	—	—	—	1	2	—	—	1	
Conn.	2	—	307	—	—	—	—	—	8	1	1	—	6	
Mid Atlantic	5	—	537	—	—	1	3	1	29	28	10	6	57	
Upstate N.Y.	2	—	197	—	—	—	—	—	16	17	3	1	15	
N.Y. City	2	—	274	—	—	—	1	—	13	11	7	—	19	
N.J.	—	—	NN	—	—	—	—	—	—	—	—	5	16	
Pa.	1	—	66	—	—	1	2	1	NA	NA	NA	—	7	
E.N. Central	11	—	3,020	—	—	3	4	—	54	46	23	1	21	
Ohio	2	—	248	—	—	1	—	—	9	5	1	—	5	
Ind.	2	—	308	—	—	—	4	—	3	—	8	—	6	
Ill.	—	—	731	—	—	—	—	—	24	14	3	—	3	
Mich.	7	—	1,099	—	—	2	—	—	17	27	11	1	7	
Wis.	—	—	634	—	—	—	—	—	1	—	—	—	—	
W.N. Central	6	1	179	—	—	—	1	—	23	27	14	3	16	
Minn.	—	—	—	—	—	—	—	—	2	—	1	2	6	
Iowa	—	—	26	—	—	—	1	—	2	4	1	—	2	
Mo.	6	—	1	—	—	—	—	—	15	19	10	1	2	
N. Dak.	—	—	31	—	—	—	—	—	—	—	—	—	1	
S. Dak.	—	—	2	—	—	—	—	—	1	—	—	—	1	
Nebr.	—	1	40	—	—	—	—	—	—	1	2	—	—	
Kans.	—	—	79	—	—	—	—	—	3	3	—	—	4	
S. Atlantic	18	—	531	—	1	—	2	—	94	82	18	4	62	
Del.	—	—	11	—	—	—	—	—	2	2	—	—	1	
Md.	2	—	126	—	—	—	—	—	21	11	3	2	10	
D.C.	—	—	—	—	—	—	—	—	—	—	—	—	1	
Va.	2	—	25	—	—	—	—	—	19	3	3	1	11	
W. Va.	—	—	163	—	—	—	—	—	2	2	—	—	3	
N.C.	—	—	NN	—	—	—	2	—	2	5	2	—	6	
S.C.	—	—	—	—	—	—	—	—	7	6	1	—	1	
Ga.	2	—	10	—	—	—	—	—	13	12	—	1	8	
Fla.	12	—	196	—	1	—	—	—	28	41	9	—	21	
E.S. Central	6	2	63	—	—	5	2	—	21	28	11	—	3	
Ky.	—	—	51	—	—	—	—	—	2	12	1	—	—	
Tenn.	5	2	NN	—	—	3	2	—	9	7	5	—	—	
Ala.	1	—	10	—	—	—	—	—	6	1	5	—	2	
Miss.	—	—	2	—	—	2	—	—	4	8	—	—	1	
W.S. Central	21	1	316	—	—	—	—	—	25	101	56	2	38	
Ark.	1	—	1	—	—	—	—	—	1	3	7	—	2	
La.	—	—	NN	—	—	—	—	—	6	18	3	—	2	
Okla.	—	1	—	—	—	—	—	—	4	4	2	1	4	
Tex.	20	—	315	—	—	—	—	—	14	76	44	1	30	
Mountain	9	—	128	—	1	1	2	—	8	41	25	—	16	
Mont.	1	—	—	—	1	—	2	—	—	1	—	—	—	
Idaho	—	—	1	—	—	—	—	—	—	6	—	—	—	
Wyo.	—	—	1	—	—	—	—	—	—	—	—	—	—	
Colo.	1	—	33	—	—	1	—	—	—	11	1	—	6	
N. Mex.	4	—	—	—	—	—	—	—	3	4	1	—	1	
Ariz.	3	—	NN	—	—	—	—	—	2	11	14	—	4	
Utah	—	—	52	—	—	—	—	—	1	3	6	—	2	
Nev.	—	—	41	—	—	—	—	—	2	5	3	—	3	
Pacific	13	—	291	—	1	4	2	—	65	119	51	9	302	
Wash.	—	—	212	—	—	—	—	—	4	3	1	—	17	
Oreg.	1	—	3	—	—	—	1	—	7	8	5	—	8	
Calif.	11	—	19	—	—	4	1	—	52	108	45	8	273	
Alaska	1	—	1	—	1	—	—	—	1	—	—	—	1	
Hawaii	—	—	56	—	—	—	—	—	1	—	—	1	3	
Guam	NA	NA	NA	NA	—	NA	—	—	NA	NA	NA	NA	—	
P.R.	—	—	12	—	—	—	—	—	3	9	3	—	4	
V.I.	NA	NA	NA	NA	—	NA	—	—	NA	NA	NA	NA	2	
Pac. Trust Terr.	NA	NA	NA	NA	—	NA	—	—	NA	NA	NA	NA	—	

NN Not notifiable. NA Not available.

All delayed reports and corrections will be included in the following week's cumulative totals.

TABLE III (Cont'd). Cases of specified notifiable diseases, United States, weeks ending June 6, 1981 and May 31, 1980 (22nd week)

Reporting Area	Measles (Rubeola)			Meningococcal Infections (Total)			Mumps		Mumps Pertussis	Rubella		Tetanus
	1981	Cum. 1981	Cum. 1980	1981	Cum. 1981	Cum. 1980	1981	Cum. 1981	1981	1981	Cum. 1981	Cum. 1981
United States	247	2,000	9,629	50	1,867	1,386	111	2,352	17	94	1,336	19
New England	—	72	598	2	121	83	4	112	—	2	99	1
Maine	—	5	25	—	18	3	2	22	—	1	33	—
N.H.	—	5	288	—	12	5	—	13	—	—	30	—
Vt.	—	1	223	—	5	9	—	4	—	—	—	—
Mass.	—	54	41	1	29	28	2	35	—	1	26	—
R.I.	—	—	2	—	11	6	—	17	—	—	—	—
Conn.	—	7	19	1	46	32	—	21	—	—	10	1
Mid Atlantic	134	599	2,955	11	242	243	31	368	2	8	151	1
Upstate N.Y.	2	188	553	1	82	83	6	66	1	4	64	—
N.Y. City	4	48	807	4	39	67	1	45	—	4	41	1
N.J.	3	49	638	1	59	50	5	78	—	—	42	—
Pa.	125	314	557	5	62	43	19	179	1	—	4	—
E.N. Central	—	70	1,457	8	213	156	35	696	5	6	284	4
Ohio	—	15	154	3	74	61	2	107	1	—	—	—
Ind.	—	7	79	1	34	30	5	84	—	—	97	—
Ill.	—	20	249	2	51	19	5	127	4	4	67	—
Mich.	—	27	192	2	50	38	12	266	—	—	31	3
Wis.	—	1	783	—	4	8	11	112	—	2	89	1
W.N. Central	—	7	1,105	2	81	57	1	170	1	—	71	2
Minn.	—	3	881	1	29	15	—	6	—	—	6	1
Iowa	—	1	20	—	16	5	1	39	—	—	3	—
Mo.	—	1	61	1	21	26	—	27	1	—	3	1
N. Dak.	—	—	—	—	1	1	—	—	—	—	—	—
S. Dak.	—	—	—	—	3	4	—	1	—	—	—	—
Nebr.	—	1	80	—	—	—	—	3	—	—	1	—
Kans.	—	1	63	—	11	6	—	94	—	—	58	—
S. Atlantic	18	305	1,525	13	449	326	13	301	4	8	125	2
Del.	—	—	1	—	4	2	3	8	—	1	1	—
Md.	—	1	37	1	29	31	—	59	—	—	1	—
D.C.	—	1	—	—	1	1	—	—	—	—	—	—
Va.	—	3	264	2	54	31	—	63	—	—	5	—
W. Va.	—	7	7	—	17	11	3	57	—	—	17	—
N.C.	—	4	106	1	63	65	1	11	—	—	4	—
S.C.	—	—	132	1	59	41	—	7	1	—	7	1
Ga.	5	99	669	6	79	62	3	32	—	6	42	—
Fla.	13	190	309	2	143	82	3	64	3	1	48	1
E.S. Central	—	—	261	3	143	131	1	60	—	2	24	1
Ky.	—	—	42	1	43	46	1	28	—	1	13	—
Tenn.	—	—	122	1	41	32	—	19	—	—	10	—
Ala.	—	—	17	1	44	32	—	12	—	1	1	1
Miss.	—	—	80	—	15	21	—	1	—	—	—	—
W.S. Central	68	680	842	2	323	156	11	149	—	15	112	3
Ark.	—	—	13	—	20	12	1	1	—	—	1	1
La.	—	—	11	—	80	54	—	3	—	—	9	—
Okla.	—	6	711	—	25	13	—	—	—	—	—	1
Tex.	68	674	107	2	198	77	10	145	—	15	102	1
Mountain	—	24	237	2	63	52	3	85	2	2	56	1
Mont.	—	—	1	—	5	2	—	5	1	—	3	—
Idaho	—	1	—	—	3	4	—	4	—	—	2	—
Wyo.	—	—	—	—	—	2	—	1	—	—	1	—
Colo.	—	5	14	—	29	13	1	39	—	—	26	—
N. Mex.	—	5	11	—	4	6	—	—	—	—	2	—
Ariz.	—	3	163	2	14	8	2	14	1	2	13	1
Utah	—	—	41	—	4	2	—	11	—	—	3	—
Nev.	—	10	7	—	4	15	—	11	—	—	6	—
Pacific	27	243	649	7	232	182	12	411	3	51	414	4
Wash.	—	1	153	—	43	31	2	119	1	—	53	—
Oreg.	—	3	—	4	35	38	—	47	—	11	30	—
Calif.	27	237	486	3	146	111	5	227	2	40	326	4
Alaska	—	—	5	—	4	2	—	4	—	—	—	—
Hawaii	—	2	5	—	4	—	5	14	—	—	5	—
Guam	NA	1	4	—	—	1	NA	1	NA	NA	—	—
P.R.	8	182	67	—	8	7	2	72	—	—	3	—
V.I.	NA	4	5	—	—	1	NA	4	NA	NA	—	—
Pac. Trust Terr.	NA	—	6	—	—	—	NA	4	NA	NA	1	—

NA Not available.

All delayed reports and corrections will be included in the following week's cumulative totals.

TABLE III (Cont'd). Cases of specified notifiable diseases, United States, weeks ending June 6, 1981 and May 31, 1980 (22nd week)

Reporting Area	Typhus Fever (Tick borne) (RMSF)							Venereal Diseases (Civilian)						Rabies (in Animals)
	Tuberculosis	Tula- remia	Typhoid Fever				Gonorrhea		Syphilis (Pri. & Sec.)					
	1981	Cum. 1981	Cum. 1981	1981	1981	1981	1981	Cum. 1981	Cum. 1980	1981	Cum. 1981	Cum. 1980	Cum. 1981	
United States	576	11,139	65	6	190	54	256	17,506	407,096	395,027	430	12,494	10,959	2,982
New England	18	299	—	—	10	—	3	443	9,878	10,123	13	270	234	11
Maine	—	23	—	—	1	—	—	13	496	590	—	1	4	6
N.H.	1	4	—	—	—	—	—	14	359	332	—	9	1	1
Vt.	—	9	—	—	—	—	—	13	180	246	—	13	3	—
Mass.	12	164	—	—	7	—	2	209	3,973	4,163	10	175	130	1
R.I.	1	19	—	—	—	—	—	25	501	605	—	16	13	—
Conn.	4	80	—	—	2	—	1	169	4,369	4,187	3	56	82	3
Mid-Atlantic	76	1,848	10	5	36	4	7	1,572	47,890	42,773	49	1,898	1,579	13
Upstate N.Y.	13	311	10	—	6	1	2	571	8,017	7,757	17	175	127	12
N.Y. City	30	712	—	2	21	—	2	NA	19,354	16,937	NA	1,146	1,037	—
N.J.	4	403	—	3	5	1	1	521	9,419	7,610	15	251	206	—
Pa.	29	422	—	—	4	2	2	480	11,100	10,469	17	326	209	1
E.N. Central	58	1,473	1	—	13	—	2	1,848	61,258	61,836	28	806	1,050	386
Ohio	23	272	—	—	—	—	2	623	21,681	16,667	6	114	163	30
Ind.	—	148	—	—	—	—	—	—	5,653	6,154	—	7	88	19
Ill.	17	599	—	—	6	—	—	251	15,260	19,313	—	411	583	310
Mich.	15	383	1	—	5	—	—	625	13,178	13,672	18	159	174	2
Wis.	3	71	—	—	2	—	—	349	5,486	6,030	4	45	42	25
W.N. Central	30	398	5	1	7	1	6	1,084	19,416	17,218	15	236	130	1,282
Minn.	2	58	—	—	2	—	—	234	3,137	2,971	7	90	44	230
Iowa	4	48	—	—	2	—	—	109	1,958	1,930	1	13	8	425
Mo.	15	175	4	—	1	—	2	526	8,928	7,127	6	110	67	107
N. Dak.	2	19	—	—	—	—	—	16	265	258	1	4	1	196
S. Dak.	—	30	—	—	1	—	—	25	550	538	—	2	1	136
Nebr.	6	15	1	1	1	—	—	76	1,521	1,490	—	3	3	97
Kans.	1	53	—	—	—	1	4	98	3,057	2,904	—	14	6	91
S. Atlantic	136	2,494	6	—	24	30	137	4,584	100,784	97,029	161	3,302	2,600	170
Del.	3	35	1	—	—	—	—	73	1,480	1,325	—	7	6	—
Md.	13	258	—	—	7	2	16	486	11,164	10,111	8	258	178	1
D.C.	4	152	—	—	1	—	—	377	6,428	6,890	9	276	181	—
Va.	14	244	—	—	1	6	20	465	9,105	8,337	16	307	234	28
W. Va.	7	82	—	—	3	—	2	61	1,516	1,244	—	9	10	9
N.C.	12	424	1	—	1	11	42	754	15,703	14,402	8	249	189	1
S.C.	17	237	2	—	—	8	40	334	9,501	9,337	9	227	136	13
Ga.	29	399	2	—	2	—	13	963	20,202	18,213	51	848	782	83
Fla.	37	663	—	—	9	3	4	1,071	25,685	27,170	60	1,121	884	35
E.S. Central	34	953	2	—	5	7	30	2,381	34,051	32,385	55	834	869	195
Ky.	9	250	2	—	—	—	2	222	4,317	4,697	—	39	68	57
Tenn.	10	316	—	—	1	6	20	593	12,652	11,321	28	336	347	110
Ala.	9	257	—	—	2	1	2	1,160	10,749	9,693	21	219	173	28
Miss.	6	130	—	—	2	—	6	406	6,333	6,674	6	240	281	—
W.S. Central	121	1,200	29	—	15	11	66	1,996	53,889	51,045	67	3,018	2,146	567
Ark.	12	120	15	—	—	3	15	96	3,738	3,817	5	60	72	80
La.	28	244	2	—	—	—	—	328	8,717	9,030	—	671	508	16
Okla.	11	136	8	—	3	8	44	239	5,663	5,057	4	78	39	103
Tex.	70	700	4	—	12	—	7	1,333	35,771	33,141	58	2,209	1,527	368
Mountain	15	321	10	—	15	—	4	574	16,046	15,225	6	320	263	71
Mont.	—	22	4	—	4	—	—	13	551	573	—	8	1	49
Idaho	—	5	2	—	—	—	1	17	690	711	3	7	8	—
Wyo.	1	5	1	—	—	—	2	26	370	435	—	4	7	4
Colo.	—	41	2	—	3	—	—	227	4,361	4,058	3	99	65	1
N. Mex.	3	63	—	—	—	—	—	73	1,757	1,884	—	67	48	12
Ariz.	4	131	—	—	8	—	—	186	4,996	4,219	—	69	93	3
Utah	—	16	1	—	—	—	—	32	753	711	—	8	5	—
Nev.	7	38	—	—	—	—	1	NA	2,568	2,634	NA	58	36	2
Pacific	88	2,153	2	—	65	1	1	3,024	63,884	67,393	36	1,810	2,088	287
Wash.	—	179	1	—	3	—	—	177	5,168	5,602	—	55	106	—
Oreg.	1	74	—	—	3	—	—	240	4,192	4,715	2	42	45	2
Calif.	87	1,816	1	—	59	1	1	2,455	51,662	54,012	30	1,673	1,860	272
Alaska	—	24	—	—	—	—	—	73	1,618	1,612	—	5	3	13
Hawaii	—	60	—	—	—	—	—	79	1,244	1,452	4	35	74	—
Guam	NA	—	—	NA	—	NA	—	NA	14	57	NA	—	2	—
P.R.	6	147	—	—	3	—	—	62	1,399	1,083	12	300	228	29
V.I.	NA	1	—	NA	1	NA	—	NA	57	89	NA	3	10	—
Pac. Trust Terr.	NA	24	—	NA	—	NA	—	NA	144	176	NA	—	—	—

NA: Not available

All delayed reports and corrections will be included in the following week's cumulative totals.

TABLE IV. Deaths in 121 U.S. cities,* week ending June 6, 1981 (22nd week)

Reporting Area	All Causes, by Age (Years)						P&I**	Total	Reporting Area	All Causes, by Age (Years)						P&I**	Total
	All Ages	65	45-64	25-44	1-24	1				All Ages	65	45-64	25-44	1-24	1		
New England	698	448	179	26	18	27	69		S. Atlantic	1,207	666	364	94	40	43	31	
Boston, Mass.	197	124	55	8	3	7	31		Atlanta, Ga.	145	71	40	14	11	9	2	
Bridgeport, Conn.	43	28	14	1	—	—	2		Baltimore, Md.	231	128	87	10	2	4	4	
Cambridge, Mass.	23	20	2	1	—	—	4		Charlotte, N.C.	61	32	21	1	2	5	2	
Fall River, Mass.	19	14	4	—	1	—	2		Jacksonville, Fla.	106	56	32	9	5	4	8	
Hartford, Conn.	63	38	18	3	3	1	2		Miami, Fla.	103	56	34	9	3	1	1	
Lowell, Mass.	26	15	8	1	2	—	1		Norfolk, Va.	54	30	13	2	4	5	2	
Lynn, Mass.	18	12	5	—	—	1	—		Richmond, Va.	61	39	15	4	2	1	1	
New Bedford, Mass.	27	23	4	—	—	—	—		Savannah, Ga.	37	17	14	3	1	2	3	
New Haven, Conn.	80	42	16	4	6	12	7		St. Petersburg, Fla.	86	68	11	2	2	3	3	
Providence, R.I.	66	41	18	3	1	3	10		Tampa, Fla.	69	42	17	5	2	3	3	
Somerville, Mass.	6	6	—	—	—	—	—		Washington, D.C.	202	97	64	30	6	5	2	
Springfield, Mass.	38	24	11	—	1	2	—		Wilmington, Del.	52	30	16	5	—	1	—	
Waterbury, Conn.	38	22	14	1	—	1	4		E.S. Central	732	431	209	50	22	20	27	
Worcester, Mass.	54	39	10	4	1	—	6		Birmingham, Ala.	143	82	41	10	7	3	1	
Mid Atlantic	2,757	1,805	615	161	85	91	95		Chattanooga, Tenn.	40	28	8	3	1	—	—	
Albany, N.Y.	32	19	6	2	1	4	—		Knoxville, Tenn.	34	25	8	—	1	—	1	
Allentown, Pa.	24	16	6	2	—	—	—		Louisville, Ky.	122	69	39	5	5	4	12	
Buffalo, N.Y.	150	102	32	8	5	3	14		Memphis, Tenn.	172	88	59	13	3	9	7	
Camden, N.J.	52	34	13	—	3	2	2		Mobile, Ala.	67	48	12	4	3	—	2	
Elizabeth, N.J.	26	18	4	2	1	1	1		Montgomery, Ala.	46	29	11	3	—	3	—	
Erie, Pa.†	41	32	8	1	—	—	—		Nashville, Tenn.	108	62	31	12	2	1	4	
Jersey City, N.J.	52	32	10	4	5	1	1		W.S. Central	1,302	727	335	103	67	65	36	
N.Y. City, N.Y.	1,372	894	304	96	42	36	35		Austin, Tex.	52	25	14	8	5	—	3	
Newark, N.J.	50	20	20	5	1	4	1		Baton Rouge, La.	41	21	16	1	3	—	—	
Paterson, N.J.	36	25	8	—	—	3	3		Corpus Christi, Tex.	46	31	6	3	2	4	—	
Philadelphia, Pa.	508	319	118	27	19	25	23		Dallas, Tex.	201	125	40	15	10	11	4	
Pittsburgh, Pa.†	70	43	18	6	2	1	2		El Paso, Tex.	40	22	9	5	3	1	2	
Reading, Pa.	36	24	7	1	2	2	—		Fort Worth, Tex.	95	49	23	12	3	8	3	
Rochester, N.Y.	103	77	20	4	—	2	6		Houston, Tex.	345	164	100	31	24	26	3	
Schenectady, N.Y.	30	25	4	—	1	—	2		Little Rock, Ark.	74	46	20	3	1	4	5	
Scranton, Pa.†	33	22	9	1	—	1	1		New Orleans, La.	117	66	36	7	7	1	1	
Syracuse, N.Y.	61	43	10	2	1	5	2		San Antonio, Tex.	168	91	51	14	6	6	6	
Trenton, N.J.	36	25	9	—	2	—	1		Shreveport, La.	41	33	7	1	—	—	—	
Utica, N.Y.	17	14	2	—	—	1	1		Tulsa, Okla.	82	54	13	8	3	4	6	
Yonkers, N.Y.	28	21	7	—	—	—	—		Mountain	617	342	140	57	46	32	23	
E.N. Central	2,377	1,438	613	149	77	100	57		Albuquerque, N. Mex.	81	25	20	16	20	—	2	
Akron, Ohio	65	48	12	2	2	1	—		Colo. Springs, Colo.	25	16	9	—	—	—	2	
Canton, Ohio	43	28	12	2	1	—	2		Denver, Colo.	131	81	24	11	2	13	3	
Chicago, Ill.	545	309	147	43	20	26	10		Las Vegas, Nev.	76	39	20	8	7	2	6	
Cincinnati, Ohio	167	107	43	5	4	8	11		Ogden, Utah	21	11	4	4	1	1	1	
Cleveland, Ohio	185	110	47	10	7	11	1		Phoenix, Ariz.	145	90	27	10	7	11	1	
Columbus, Ohio	181	100	59	10	7	5	5		Pueblo, Colo.	21	15	4	—	1	1	3	
Dayton, Ohio	116	71	28	8	5	4	3		Salt Lake City, Utah	37	15	10	3	5	4	1	
Detroit, Mich.	285	169	68	26	11	11	4		Tucson, Ariz.	80	50	22	5	3	—	4	
Evansville, Ind.	45	35	8	1	1	—	2		Pacific	1,710	1,100	376	119	57	56	67	
Fort Wayne, Ind.	61	40	17	2	1	1	4		Berkeley, Calif.	17	9	3	2	2	—	—	
Gary, Ind.	19	6	7	2	3	1	—		Fresno, Calif.	60	37	14	3	3	3	2	
Grand Rapids, Mich.	44	28	12	1	—	3	2		Glendale, Calif.	18	15	1	1	—	1	1	
Indianapolis, Ind.	170	96	47	12	5	10	2		Honolulu, Hawaii	47	24	18	3	2	—	3	
Madison, Wis.	34	23	9	—	1	1	1		Long Beach, Calif.	93	58	25	5	2	3	2	
Milwaukee, Wis.	120	75	30	6	3	6	—		Los Angeles, Calif.	412	280	75	33	16	7	16	
Peoria, Ill.	41	23	13	2	—	3	3		Oakland, Calif.§	84	51	18	7	4	4	4	
Rockford, Ill.	41	25	11	1	1	3	1		Pasadena, Calif.	24	15	6	1	—	2	1	
South Bend, Ind.	47	33	9	4	—	1	3		Portland, Oreg.	126	84	28	7	2	5	3	
Toledo, Ohio	111	74	21	8	5	3	2		Sacramento, Calif.	83	42	21	10	5	5	5	
Youngstown, Ohio	57	88	13	4	—	2	1		San Diego, Calif.	138	86	33	9	5	5	2	
W.N. Central	799	510	184	40	33	32	42		San Francisco, Calif.	161	111	34	10	2	4	3	
Des Moines, Iowa	47	36	9	1	—	1	2		San Jose, Calif.	179	117	38	12	6	6	15	
Duluth, Minn.	32	20	8	1	3	—	2		Seattle, Wash.	166	101	39	14	5	7	5	
Kansas City, Kans.	37	32	4	1	—	—	—		Spokane, Wash.	58	41	11	1	3	2	3	
Kansas City, Mo.	125	76	26	10	5	8	6		Tacoma, Wash.	44	29	12	1	—	2	2	
Lincoln, Nebr.	33	27	4	2	—	—	1		Total	12,199††	7,467	3,015	804	445	466	447	
Minneapolis, Minn.	108	69	25	4	5	5	2										
Omaha, Nebr.	86	52	23	3	2	6	5										
St. Louis, Mo.	194	104	54	10	16	10	12										
St. Paul, Minn.	71	53	15	1	1	1	2										
Wichita, Kans.	66	41	16	7	1	1	10										

*Mortality data in this table are voluntarily reported from 121 cities in the United States, most of which have populations of 100,000 or more. A death is reported by the place of its occurrence and by the week that the death certificate was filed. Fetal deaths are not included.

**Pneumonia and influenza.

†Because of changes in reporting methods in these 3 Pennsylvania cities, these numbers are partial counts for the current week. Complete counts will be available in 4 to 6 weeks.

††Total includes unknown ages.

§Data not available this week. Figures are estimates based on average percent of regional totals.

several reasons. First, it has not been determined that most outbreaks of foodborne disease are connected with food handlers. Second, medical examinations and laboratory analyses are very expensive, making it possible to identify only a small proportion of the carriers of pathogenic organisms. Finally, because of the rapid turnover of workers in the food industry, it is difficult for administrators to assure that all employees are checked. These three points are discussed in detail below.

In most European countries, a medical examination before employment in the food industry is required by law. Requirements for later, regularly scheduled examinations vary from country to country. Food handlers (excluding homemakers) account for 6%-10% of the population in these countries.

A number of participants in the working group expressed doubts about the effectiveness of the national policies of their countries regarding the medical examination of food handlers. The group agreed that insufficient resources are available for examining all the workers and that, if these examinations are made routinely and on a general basis, the cost represents an inefficient use of available resources. Therefore, the participants urged that attention be concentrated on workers most likely to be carriers of pathogenic organisms and on persons who work with foods that permit rapid growth of pathogenic organisms and/or are consumed by especially vulnerable groups such as children and the elderly.

The group further agreed that the mandatory medical examinations of food handlers in many European countries are not effective for detecting carriers, and that routine microbiologic examinations of stool specimens from food handlers may not identify healthy carriers of enteropathogenic organisms. However, appropriate tests do reveal some sources of staphylococcal infection (e.g., infected skin lesions) and may provide guidance for more in-depth investigations. Most members of the group agreed that, although human carriers may be a source of intestinal pathogens that cause contamination of food, other sources such as raw foods or food items that are improperly cooked or stored are much more important. Past experience also indicates that routine examination of all food handlers may not be an effective prevention strategy, that medical examinations should be aimed at specific problems, and that governments should consider appropriate education of workers and strict supervision and control of food hygiene as much more effective alternatives.

Among the recommendations of the working group were the following:

1. Since no medical examination (even if it includes detailed microbiologic tests) can ever reliably exclude all carriers of enteropathogens, all food handlers must appreciate their responsibility and always practice the highest levels of hygiene. To that end, they must be instructed in hygienic practices. This instruction should be the responsibility not only of health au-

thorities but also of employers in the food-handling industry.

2. Occupational health nurses and other appropriately trained health personnel have an important role in the food industry, since they can assist in investigating certain conditions such as staphylococcal skin infections, encourage workers to report episodes of illness, and assist in controlling the health and hygiene of food handlers.

3. Examinations of food handlers, including microbiologic tests, should be performed promptly and thoroughly when epidemiologic or clinical evidence indicates a need, e.g., when food handlers have been ill or when an outbreak of foodborne disease has occurred in the community.

4. No persons should be allowed to work in situations in which they could contaminate food if they have symptoms of gastrointestinal infection or obvious infection of the skin or upper respiratory tract. This is essential even in the absence of positive microbiology test findings.

5. Since thorough washing of the hands is very effective in removing enteropathogens, all persons engaged in preparing food commercially or in the home should wash hands thoroughly and frequently.

6. Research should be conducted to determine the efficiency and effectiveness of medical examinations of food handlers in the prevention of foodborne diseases.

Reference

Pan American Health Organization. Health examination of food handlers. *Epidemiological Bulletin* 1980, 1:9,10.

SIR THOMAS BROWNE [1605-1682]

Hippocrates wisely considered Dreams as they presaged Alterations in the Body, and so afforded hints toward the preservation of Health, and prevention of Diseases; and therein was so serious as to advise Alteration of Diet, Exercise, Sweating, Bathing and Vomiting.

A Letter to a Friend

Toxic Encounters of the Dangerous Kind

THE ARUM FAMILY

This article is about a notorious but attractive family with noxious potential. It is not a story about the Cosa Nostra or a band of Western desperados but rather a short discussion of the most common plants with toxic potential ingested by children under the age of five years (as reported to the National Clearinghouse for Poison Control Centers).

In recent years plants have been the most common foreign substance ingested by preschool children; about 11% of the total reported cases. Approximately 85% of such ingestions have been by children under three years of age; 70% by children less than two years old. Probably 90% or more of preschool children who ingest plant elements do not develop symptoms, 9% are mildly symptomatic and less than 0.5% require hospitalization. Death from a plant ingestion by a small child is quite rare in this country.

Two most common plants eaten according to recent reports, are members of the Arum family — Philodendron (#1) and Diffenbachia (#2). Other members of this family include the Caladium, elephant ear, Dracunculus, jack-in-the-pulpit and calla lily. All parts of these large-leaved plants contain millions of tiny, insoluble, needle-shaped intercellular calcium oxalate crystals. When an

unwary victim bites an attractive leaf, the small knife-like crystals become embedded in the tongue and buccal mucosa. This oral adventure smarts! The result is intense pain and inflammation described as being similar to "chewing ground glass" or "biting a hornet's nest." The pain is usually followed immediately by swelling of the lips, tongue and palate. Pharyngeal and laryngeal edema are quite rare. The calcium oxalate crystals generally pass undissolved through the GI tract and present little or no danger of systemic poisoning by absorption. Vomiting and diarrhea can occur but generally do not.

The treatment is simple and nonspecific: remove the plant from the victim's mouth and give the patient a popsicle (probably the best treatment), ice cream, cold milk or a cold pack. Antihistamines may be useful in reducing the edema.

You probably have a Philodendron at home and a Diffenbachia in your office, so beware!

Ronald B. Mack, M.D.
Department of Pediatrics
Bowman Gray School of Medicine
of Wake Forest University
Winston-Salem, N.C., and
Chairman, Committee on Accidents
and Poison Prevention
N.C. Chapter of the American
Academy of Pediatrics

JOHN MILTON [1608-1674]

Then also in course might be read to them out of some not tedious Writer the Institution of Physick; that they may know the tempers, the humours, the seasons, and how to manage a crudity [indigestion]: which he who can wisely and timely do, is not only a great Physitian to himself, and to his friends, but also may at some time or other, save an Army by this frugal and expenseless means only; and not let the healthy and stout bodies of young men rot away under him for want of this discipline; which is a great pity, and no less a shame to the Commander.

Of Education

First Class First Aid

In
your
office

In
their
homes

Recommend

NEOSPORIN[®] Ointment

(POLYMYXIN B-BACITRACIN-NEOMYCIN)

- Broad-spectrum antibacterial
- Handy applicator tip

DESCRIPTION: Each gram contains Aerosporin[®] (Polymyxin B Sulfate) 5,000 units, Neomycin zinc 400 units, neomycin sulfate 5 mg (equivalent to 3.5 mg neomycin base), and white petrolatum qs; in tubes of 1 oz and 1/2 oz and 1/4 oz (approx.) foil packets.

INDICATIONS: Therapeutically (as an adjunct to systemic therapy when indicated), for infections, primary or secondary, due to susceptible organisms, as in: infected skin grafts, surgical incisions, otitis externa • primary pyoderma (impetigo), scabies, scycosis vulgaris, paronychia • secondarily infected dermatoses (eczema, herpes, psoriasis, dermatitis) • traumatic lesions, inflamed or suppurating as a result of infection. Prophylactically the ointment may be used to prevent bacterial contamination in burns, skin grafts, incisions, and other clean lesions. For abrasions, minor cuts and wounds accidentally incurred, its use may prevent the development of infection and promote wound healing.

CONTRAINDICATIONS: Not for use in the eyes or in the external ear canal if the eardrum is perforated. This product is contraindicated in those individuals who have shown hypersensitivity to any of its components.

WARNING: Because of the potential hazard of nephrotoxicity and ototoxicity due to neomycin, care should be exercised when using this product in treating extensive burns, trophic ulceration and other extensive conditions where absorption of neo-



mycin is possible. In burns where more than 20 percent of the body surface is affected, especially if the patient has impaired renal function or is receiving other aminoglycoside antibiotics concurrently, not more than one application a day is recommended.

When using neomycin-containing products to control secondary infection in the chronic dermatoses, it should be borne in mind that the skin is more liable to become sensitized to many substances, including neomycin. The manifestation of sensitization to neomycin is usually a low grade redness with swelling, dry scaling and itching; it may be manifest simply as a failure to heal. During long-term use of neomycin-containing products, periodic examination for such signs is advisable and the patient should be told to discontinue the product if they are observed. These symptoms regress quickly on withdrawing the medication. Neomycin-containing applications should be avoided for that patient thereafter.

PRECAUTIONS: As with other antibacterial preparations, prolonged use may result in overgrowth of nonsusceptible organisms, including fungi. Appropriate measures should be taken if this occurs.

ADVERSE REACTIONS: Neomycin is a not uncommon cutaneous sensitizer. Articles in the current literature indicate an increase in the prevalence of persons allergic to neomycin. Ototoxicity and nephrotoxicity have been reported (see Warning section). Complete literature available on request from Professional Services Dept. PML.



Burroughs Wellcome Co.
Research Triangle Park
North Carolina 27709

Motrin[®] vs aspirin w/codeine..

(ibuprofen)



compare the analgesic effect

A *Motrin* 400 mg dose relieved postsurgical dental pain as effectively as a combination of 650 mg aspirin and 60 mg codeine (two aspirin-with-codeine No. 3 tablets) in a study of 129 patients.

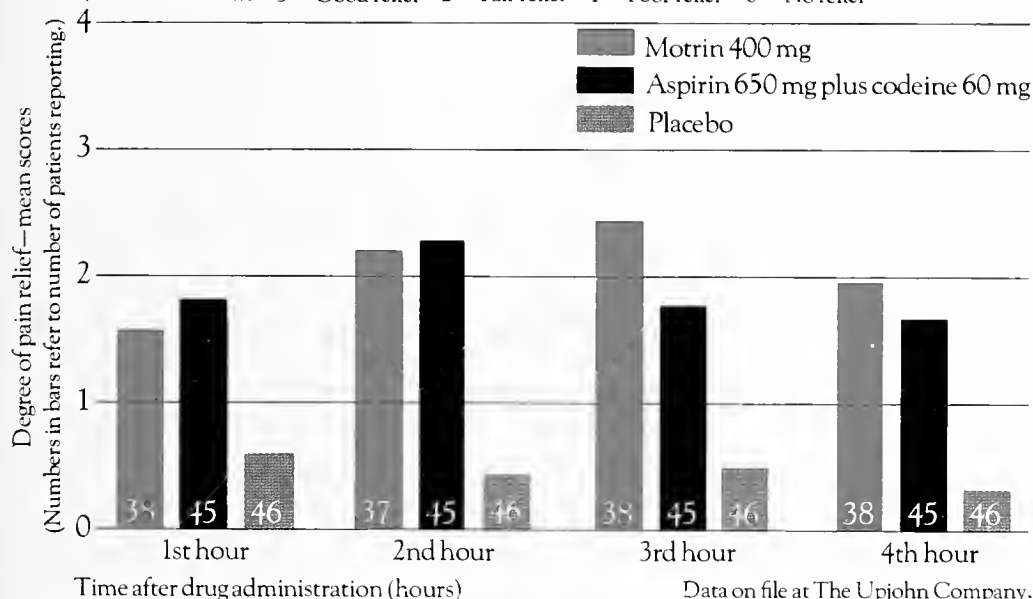
In this double-blind, placebo-controlled, randomized study, no statistically significant difference in relief of pain was noted at 1, 2, and 4 hours between the *Motrin* and aspirin-with-codeine groups... with *Motrin* being significantly more effective ($p = 0.03$) at the three-hour interval.

Active treatment was significantly more effective ($p < 0.0001$) than placebo at all time intervals.

Comparison of pain relief

Motrin vs aspirin-codeine combination

4 = Excellent relief 3 = Good relief 2 = Fair relief 1 = Poor relief 0 = No relief



One tablet q4-6h prn

For relief of mild to moderate pain:

Motrin[®] 400mg TABLETS
ibuprofen, Upjohn

- Not a narcotic • Not addictive • Not habit forming • Nonscheduled
- Acts peripherally • Relieves pain rapidly • Relieves inflammation • Indicated in acute and chronic pain • Well tolerated (The most common side effect with *Motrin* is mild gastrointestinal disturbance.)

Please turn the page for a brief summary of prescribing information.

Upjohn

Motrin® (ibuprofen)

now proved an
effective analgesic for
mild to moderate pain

Motrin® Tablets (ibuprofen, Upjohn)

Indications and Usage: Relief of mild to moderate pain

Treatment of signs and symptoms of rheumatoid arthritis and osteoarthritis during acute flares and in long-term management. Safety and efficacy have not been established in Functional Class IV rheumatoid arthritis.

Contraindications: Individuals hypersensitive to it, or with the syndrome of nasal polyps, angioedema and bronchospastic reactivity to aspirin or other nonsteroidal anti-inflammatory agents (see WARNINGS).

Warnings: Anaphylactoid reactions have occurred in patients with aspirin hypersensitivity (see CONTRAINDICATIONS).

Peptic ulceration and gastrointestinal bleeding, sometimes severe, have been reported. Ulceration, perforation, and bleeding may end fatally. An association has not been established. Motrin should be given under close supervision to patients with a history of upper gastrointestinal tract disease, only after consulting ADVERSE REACTIONS.

In patients with active peptic ulcer and active rheumatoid arthritis, nonulcerogenic drugs, such as gold, should be tried. If Motrin must be given, the patient should be under close supervision for signs of ulcer perforation or gastrointestinal bleeding.

Precautions: Blurred and/or diminished vision, scotomata, and/or changes in color vision have been reported. If these develop, discontinue Motrin and the patient should have an ophthalmologic examination, including central visual fields.

Fluid retention and edema have been associated with Motrin, use with caution in patients with a history of cardiac decompensation.

Motrin can inhibit platelet aggregation and prolong bleeding time. Use with caution in persons with intrinsic coagulation defects and those on anticoagulant therapy.

Patients should report signs or symptoms of gastrointestinal ulceration or bleeding, blurred vision or other eye symptoms, skin rash, weight gain, or edema.

To avoid exacerbation of disease or adrenal insufficiency, patients on prolonged corticosteroid therapy should have therapy tapered slowly when Motrin is added.

Drug interactions. *Aspirin:* Used concomitantly may decrease Motrin blood levels.

Coumarin: Bleeding has been reported in patients taking Motrin and coumarin.

Pregnancy and nursing mothers: Motrin should not be taken during pregnancy nor by nursing mothers.

Adverse Reactions

Incidence greater than 1%

Gastrointestinal: The most frequent type of adverse reaction occurring with Motrin is gastrointestinal (4% to 16%). This includes nausea, epigastric pain, heartburn, diarrhea, abdominal distress, nausea and vomiting, indigestion, constipation, abdominal cramps or pain, fullness of the GI tract (bloating and flatulence). **Central Nervous System:** Dizziness, headache, nervousness. **Dermatologic:** Rash (including maculopapular type), pruritus. **Special Senses:** Tinnitus. **Metabolic:** Decreased appetite, edema, fluid retention. Fluid retention generally responds promptly to drug discontinuation (see PRECAUTIONS).

Incidence 3% to 9%.

Incidence less than 1 in 100

Gastrointestinal: Upper GI ulcer with bleeding and/or perforation, hemorrhage, melena.

Central Nervous System: Depression, insomnia. **Dermatologic:** Vesiculobullous eruptions, urticaria, erythema multiforme. **Cardiovascular:** Congestive heart failure in patients with marginal cardiac function, elevated blood pressure. **Special Senses:** Amblyopia (see PRECAUTIONS). **Hematologic:** Leukopenia, decreased hemoglobin and hematocrit.

Causal relationship unknown

Gastrointestinal: Hepatitis, jaundice, abnormal liver function. **Central Nervous System:** Paresthesias, hallucinations, dream abnormalities. **Dermatologic:** Alopecia, Stevens-Johnson syndrome. **Special Senses:** Conjunctivitis, diplopia, optic neuritis. **Hematologic:** Hemolytic anemia, thrombocytopenia, granulocytopenia, bleeding episodes. **Allergic:** Fever, serum sickness, lupus erythematosus syndrome. **Endocrine:** Gynecomastia, hypoglycemia. **Cardiovascular:** Arrhythmias. **Renal:** Decreased creatinine clearance, polyuria, azotemia.

Overdosage: In cases of acute overdosage, the stomach should be emptied. The drug is acidic and excreted in the urine, so alkaline diuresis may be beneficial.

Dosage and Administration: Rheumatoid arthritis and osteoarthritis, including flares of chronic disease. Suggested dosage is 300, 400, or 600 mg t.i.d. or q.i.d. Mild to moderate pain 400 mg every 4 to 6 hours as necessary for relief of pain. Do not exceed 2400 mg per day.

Caution: Federal law prohibits dispensing without prescription.

For additional product information, see your Upjohn representative or consult the package insert.

Upjohn THE UPJOHN COMPANY
Kalamazoo, Michigan 49001 USA

MED B-4-S

J-8260-4

MARCH 1981

It's time we took
arthritis seriously

It's a myth that arthritis is just the minor aches and pains of old age. It's a majorcrippler that attacks. Anybody. Anytime. 31 million Americans have it. There are almost a million new cases a year. And six out of ten are under 60. Symptoms can come and go for years. So if you don't know the warning signals, find out. If you'd like information that could help you—or you'd like to help us—write to the Arthritis Foundation, Box 19000, Atlanta, GA 30326.



ARTHRITIS
FOUNDATION

Editorials

SUGGESTIONS FOR AUTHORS

The NORTH CAROLINA MEDICAL JOURNAL welcomes the contribution of original articles — scientific, historic, and editorial — provided that they have neither been published previously nor have they been simultaneously submitted for publication in other medical periodicals. Papers concerned with all aspects of the practice of medicine in North Carolina are particularly solicited.

In addition, in view of "The Copyright Revision Act of 1976," letters of transmission to the editor should contain the following language: "In consideration of the North Carolina Medical Society's taking action in reviewing and editing my submission, the author(s) undersigned hereby transfers, assigns, or otherwise conveys all copyright ownership to the North Carolina Medical Society in the event that such work is published in the NORTH CAROLINA MEDICAL JOURNAL." We regret that transmittal letters not containing the foregoing language signed by "all" authors of the submission will necessitate delay in review of the manuscript.

The NORTH CAROLINA MEDICAL JOURNAL accepts manuscripts prepared and submitted in accordance with uniform requirements defined by the International Steering Committee of Medical Editors as described below.

PREPARATION OF MANUSCRIPT

Type manuscripts on 20.3 x 26.7 cm or 21.6 x 27.9 cm (8 x 10½ in or 8½ x 11 in) or ISO A4 (212 x 297 mm) white bond paper with margins of at least 2.5 cm (1 in). Use double spacing throughout, including title page, abstract, text, acknowledgments, references, tables, and legends for illustrations. Submit three copies of the complete manuscript and three sets of glossy prints of all figures. Begin each of the following sections on separate pages: title page, abstract and key words, text, acknowledgments, references, individual tables, and legends. Number pages consecutively, beginning with the title page. Type the page number in the upper right-hand corner of each page.

Manuscripts are reviewed for possible publication with the understanding that they are being submitted to one journal at a time and have not been published, simultaneously submitted, or already accepted for publication elsewhere. This does not preclude consideration of a manuscript that has been rejected by another journal or of a complete report that follows publication of preliminary findings elsewhere, usually in the form of an abstract. Copies of any possible duplicative published material should be submitted

together with the manuscript that is being sent for consideration.

TITLE PAGE

The title page should contain: (1) the title of the article, which should be concise but informative; (2) a short running head or footline of no more than 40 characters (count letters and spaces) placed at the foot of the title page and identified; (3) first name, middle initial, and last name of each author, with highest academic degree(s); (4) name of department(s) and institution(s) to which the work should be attributed; (5) disclaimers, if any; (6) name and address of author responsible for correspondence about the manuscript; (7) name and address of author to whom requests for reprints should be addressed, or statement that reprints will not be available from the author; (8) the source(s) of support in the form of grants, equipment, or drugs.

ABSTRACT AND KEY WORDS

The second page should carry an abstract of not more than 150 words. State the purposes of the study or investigation, basic procedures (study subjects or experimental animals and observational and analytical methods), main findings (give specific data and their statistical significance, if possible), and the principal conclusions. Emphasize new and important aspects of the study or observations. Use only approved abbreviations (see Appendix for commonly used abbreviations).

Key (indexing) terms—Below the abstract provide and identify as such three to 10 key words or short phrases that will assist indexers in cross-indexing your article and that may be published with the abstract. Use terms from the Medical Subject Headings list from *Index Medicus* whenever possible.

TEXT

The text of observational and experimental articles is usually, but not necessarily, divided into sections with the headings Introduction, Methods, Results, and Discussion. Long articles may need subheadings within some sections to clarify their content, especially the Results and Discussion sections. Other types of articles need not conform to this format, and authors should consult individual journals for further guidance.

Introduction—State clearly the purpose of the article. Summarize the rationale for the study or observation. Give only strictly pertinent references and do not review the subject extensively.

Methods—Describe your selection of the observa-

tional or experimental subjects (patients or experimental animals, including controls) clearly. Identify the methods, apparatus (manufacturer's name and address within parentheses), and procedures used in sufficient detail to allow other workers to reproduce the results. Give references to established methods, including statistical methods; provide references and brief descriptions of methods that have been published but are not well known; describe new or substantially modified methods, give reasons for using them, and evaluate their limitations. When reporting experiments on human or animal subjects, indicate whether the procedures followed were in accord with the ethical standards of the committee of human experimentation of the institution in which the experiments were done or in accordance with the Helsinki Declaration of 1975. Identify precisely all drugs and chemicals used, including generic name(s), dosage(s), and route(s) of administration. Do not use patients' names, initials, or hospital numbers. Include numbers of observations and their statistical significance when appropriate. Detailed statistical analyses, mathematical derivations, and the like may sometimes be suitably presented in the form of one or more appendixes.

Results—Present your results in logical sequence in the text, tables, and illustrations. Do not repeat in the text all the data in the tables or illustrations, or both; emphasize or summarize only important observations.

Discussion—Emphasize the new and important aspects of the study and conclusions that follow from them. Do not repeat data given in the Results section. Include in the Discussion the implications of the findings and their limitations and relate the observations to other relevant studies. Link the conclusions with the goals of the study but avoid unqualified statements and conclusions not completely supported by your data. Avoid claiming priority and alluding to work that has not been completed. State new hypotheses when warranted, but clearly label them as such.

ACKNOWLEDGMENTS

Acknowledge only persons who have made substantive contributions to the study. Authors are responsible for obtaining written permission to do so because such an acknowledgment may imply endorsement of the data and conclusions.

REFERENCES

Number references consecutively in the order in which they are first mentioned in the text. Identify references in text, tables, and legends by arabic numerals (within parentheses). References cited only in tables or in legends to figures should be numbered in accordance with a sequence established by the first identification in the text of the particular table or illustration.

Use the form of references adopted by the United States National Library of Medicine and used in *Index Medicus*. For references not included in *Index Medi-*

cus use the style of the examples cited subsequently; these adhere to the abbreviated form of references established by the American National (ANSI) Standard for Bibliographic References and have been approved by the National Library of Medicine.

The names of journals should be abbreviated according to the style used by *Index Medicus*; consult the "List of Journals Indexed," which is printed each year in the January issue of *Index Medicus*.

Try to avoid the use of abstracts as references; "unpublished observations" and "personal (written, not verbal) communications" may not be used as references, although references to them may be inserted (within parentheses) in the text. Include manuscripts accepted but not yet published among the references as in press; designate the journal followed by "in press" (within parentheses). Cite manuscripts submitted but not yet accepted in the text as "unpublished observations" (within parentheses).

The references must be verified against the original documents. Examples of correct forms of references are given below.

Journal

- (1) *Standard journal article*—(List all authors when six or less; when seven or more, list only first three.)

Solter NA, Wasserman SI, Austen KF: Cold urticaria: Release into the circulation of histamine and eosinophilic chemotactic factor of anaphylaxis during cold challenge. *N Engl J Med* 1976; 294: 687-90.

- (2) *Corporate author*

The Committee on Enzymes of the Scandinavian Society for Clinical Chemistry and Clinical Psychology. Recommended method for the determination of gamma-glutamyltransferase in blood. *Scand J Clin Lab Invest* 1976; 36: 119-25.

Anonymous. Epidemiology for primary health care. *Int J Epidemiol* 1976; 5: 224-5.

Books and other monographs

- (3) *Personal author(s)*

Osler AG: Complement: mechanisms and functions. Englewood Cliffs: Prentice-Hall, 1976.

- (4) *Corporate author*

American Medical Association Department of Drugs. AMA drug evaluations. 3rd ed. Littleton Publishing Sciences Group, 1977.

- (5) *Editor, compiler, chairman as author*

Rhodes AJ, Van Rooyen CE, comps. Textbook of virology: for students and practitioners of medicine and other health sciences. 5th ed. Baltimore: Williams & Wilkins, 1968.

- (6) *Chapter in book*

Weinstein L, Swartz MN: Pathogenetic properties of invading microorganisms. pp. 457-72. In: Sodeman WA Jr, Sodeman WA, eds.

Pathologic physiology: mechanisms of disease. Philadelphia: WB Saunders, 1974.

(7) *Agency publication*

National Center for Health Statistics. Acute conditions, incidence and associated disability, United States July 1968-June 1969. Series 10. No 69, 1972, DHEW Pub No (HSM) 72-1036.

(8) *Newspaper article*

Shaffer RA: Advances in chemistry are starting to unlock mysteries of the brain: Discoveries could help cure alcoholism and insomnia, explain mental illness. The Wall Street Journal 1977 Aug 12: 1 (col. 1), 10 (col. 1).

(9) *Magazine article*

Roneché B: Annals of medicine: The santa claus culture. The New Yorker 1971 Sept 4: 66-81.

TABLES

Type each table on a separate sheet; remember to double-space. Do not submit tables as photographs. Number tables consecutively and supply a brief title for each. Give each column a short or abbreviated heading. Place explanatory matter in footnotes, not in the heading. Explain in footnotes all non-standard abbreviations that are used in each table. For footnotes, use the following symbols in order: *, †, ‡, §, ¶, ||, **, ††, etc. Identify statistical measures of variations such as SD and SEM.

Omit internal horizontal and vertical rules.

Cite each table in the text in consecutive order.

If you use data from another published or unpublished source, obtain permission and acknowledge fully.

A number of tables that is excessive in relation to the length of the text may produce difficulties in the layout of pages. Examine issues of the journal to which you plan to submit your paper to estimate how many tables may be used per 1000 words of text.

On recommendation of the editor after acceptance of a manuscript, additional tables containing important backup data too extensive to be published may be deposited with the National Auxiliary Publications Service or made available by the author(s). In that event an appropriate statement will be added to the text. Submit such tables for consideration with the manuscript.

ILLUSTRATIONS

Submit three complete sets of figures. Figures should be professionally drawn and photographed; freehand or typewritten lettering is unacceptable. Instead of original drawings, roentgenograms, and other material, send sharp, glossy black and white photographic prints no larger than 20.3 x 25.4 cm (8 x 10 in). Letters, numbers, and symbols should be clear and even throughout, and of sufficient size that when reduced for publication each item will still be legible. Titles and detailed explanations belong in the legends for illustrations, not in the illustrations themselves.

Each figure should have a label pasted on its back indicating the number of the figure, the names of the authors, and the top of the figure. Do not write on the back of the figures or mount them on cardboard, or scratch or mar them using paper clips. Do not bend figures.

Photomicrographs must have internal scale markers. Symbols, arrows, or letters used in the photomicrographs should contrast with the background.

If photographs of people are used, either the subjects should not be identifiable or their pictures must be accompanied by written permission to use the photograph.

Cite each figure in the text in consecutive order. If a figure has been published, acknowledge the original source and submit written permission of the copyright holder to reproduce the material. Permission is required, regardless of authorship or publisher, except for documents in the public domain.

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Type legends for illustrations double-space on a separate page with arabic numerals corresponding to the illustrations. When symbols, arrows, numbers, or letters are used to identify parts of the illustrations, identify and explain each one clearly in the legend. Explain internal scale and identify method of staining in photomicrographs.

ABBREVIATIONS

Use only standard abbreviations (see Appendix). Consult the *Council of Biology Editors Style Manual* (4th edition) and the *ELSE Manual* for lists of additional standard abbreviations. Avoid abbreviations in the title. The full term for which an abbreviation stands should precede its first use in the text unless it is a standard unit of measurement.

In many countries the International System of Units (SI) is standard or is becoming so. Report measurements in the units in which they were made. Journals may use these units, convert them to another system, or use both.

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Mail manuscripts in a heavy paper envelope, enclosing the manuscript and figures in cardboard, if necessary, to prevent bending of photographs during mail handling. Place photographs and transparencies in heavy paper envelopes.

Manuscripts should be accompanied by a covering letter from the author who will be responsible for correspondence regarding the manuscript. The covering letter should contain a statement that the manuscript has been seen and approved by all authors. The

letter should give any additional information that may be helpful to the editor, such as the type of article the manuscript represents in the particular journal; information on publication of any part of the manuscript and whether the author(s) will be willing to meet the cost of reproducing color illustrations. Include copies of any permissions needed to reproduce published material or to use illustrations of identifiable subjects.

Appendix

COMMONLY USED APPROVED ABBREVIATIONS

TABLE 1—Standard units of measurements and statistical terms

Term	Abbreviation or symbol
<i>Standard units of measurement</i>	
ampere	A
Angstrom	Å
barn	b
candela	cd
coulomb	C
counts per minute	cpm or counts/min
counts per second	cps or counts/sec
curie	Ci
degree Celsius	°C
disintegrations per minute	dpm or dis/min
disintegrations per second	dps or dis/sec
electron Volt	eV
equivalent	Eq
farad	F
gauss	G
gram	g
henry	H
hertz	Hz
hour	h or hr
international unit	IU
joule	J
kelvin	K
kilogram	kg
liter, litre	l
meter, metre	m
minute	min
molar	M
mole	mol
newton	N
normal (concentration)	N
ohm	Ω
osmol	osmol
pascal	Pa
revolutions per minute	rpm or r/min
second	s
square centimeter	cm ²
volt	V
watts	W
week	wk
year	yr
<i>Statistical terms</i>	
correlation coefficient	r
degrees of freedom	df
mean	\bar{x}
not significant	NS
number of observations	n

probability
standard deviation
standard error of the mean
"Student's" *t* test
variance ratio

p
SD
SEM
t test
F

TABLE II—Combining factors

Name and factor	Symbol	Name and factor	Symbol
tera- (10^{12})	T	centi- (10^{-2})	c
giga- (10^9)	G	milli- (10^{-3})	m
mega- (10^6)	M	micro- (10^{-6})	μ
kilo- (10^3)	k	nano- (10^{-9})	n
hecto- (10^2)	h	pico- (10^{-12})	p
deca- (10^1)	da	femto- (10^{-15})	f
deci- (10^{-1})	d	atto- (10^{-18})	a

TABLE III—Other common abbreviations

Term	Abbreviation or symbol
adenosinediphosphatase	ADPase
adenosine 5'-diphosphate (adenosine diphosphate)	ADP
adenosine 5'-monophosphate (adenosine monophosphate, adenylic acid)	AMP
adenosine triphosphatase	ATPase
adenosine 5'-triphosphate (adenosine triphosphate)	ATP
adrenocorticotrophic hormone (adrenocorticotropin)	ACTH
bacillus Calmette-Guerin	BCG
body temperature, pressure, and saturated	BTPS
basal metabolic rate	BMR
central nervous system	CNS
coenzyme A	coA
deoxyribonucleic acid (deoxyribonucleate)	DNA
dihydroxyphenethylamine	dopamine
electrocardiogram	ECG
electroencephalogram	EEG
enteric cytopathogenic human orphan (virus)	ECHO
ethyl	Et
ethylenediaminetetraacetate	EDTA
gas-liquid chromatography	GLC
guanosine 5'-monophosphate (guanosine monophosphate, guanylic acid)	GMP
haemoglobin	Hb
logarithm (to base 10; common logarithm)	log
logarithm, natural	ln
methyl	Me
Michaelis constant	Km
negative logarithm of hydrogen ion activity	pH
partial pressure of CO ₂	PCO ₂
partial pressure of O ₂	PO ₂
per	/
per cent	%
radiation (ionising, absorbed dose)	rad
respiratory quotient	RQ
specific gravity	sp gr
standard atmosphere	atm
standard temperature and pressure	STP
ultraviolet	uv
volume	vol
volume ratio (volume per volume)	vol/vol
weight	wt
weight per volume	wt/vol
weight ratio (weight per weight)	wt/wt

THE RETURN OF ARCHY

Treadmill is a word in transition. It used to suggest repetition, monotony, the rat race — a chore which could not be avoided or a device for a pet hamster. Now it appears to have acquired a certain dignity because it has entered the medical vocabulary. Unfortunately, before they can speak proudly of taking the treadmill, people must present with cardiac symptoms or have a myocardial infarction. Then the results of the treadmill take on a great significance. The machine for good or ill quantifies and prognosticates. Treadmills are now for men, not mice.

Treadmills are for marsupials, too.¹ Exercise physiologists in Boston and in New South Wales have been studying kangaroo energetics employing the treadmill to help them determine oxygen consumption. The investigators are interested in why and how the kangaroo hops and at what metabolic costs.

The group at the Museum of Comparative Zoology at Harvard University has found that these animals are extremely inefficient walkers but are able to use their tendons as springs to hop. Whereas other terrestrial animals run and increase their oxygen consumption in order to move faster, kangaroos hop and actually decrease oxygen utilization. If they want to move even faster, they use their whole bodies as springs and take longer hops. Since the creatures live in the desert where grass is scarce and rain is scant, they must have learned to hop from patch to patch to survive because they were hungry.

Biologists in Buffalo have found that treadmills are also for cockroaches whose oxygen consumption is directly related to their running velocity.² Apparently the large, wingless tropical cockroach *Gromphadorhina portentosa*, their experimental roach, does not hop, or at least didn't in the Buffalo treadmill. That roaches have become targets for scientific concern must be heartening to them. The most primitive of living winged insects and among the most ancient of fossil insects, cockroaches, after the Permian period, we are informed by the *Encyclopaedia Britannica*, "lost their pre-eminence and gradually declined to their present insignificant status among insects." But things are looking up for them because the *Britannica* further states that "some house pests, such as the Oriental cockroach (*Bletta orientalis*), have become cosmopolitan."

Perhaps their cosmopolitanism is the result of their appeal to biologists, chemists and exercise physiologists. A researcher at Emory University in Atlanta has found that cockroaches aren't much trouble to raise, a prerequisite in seeking an animal to study in these cost conscious times. Their muscle fibers are quite similar to human skeletal muscle so that the effects of different types of exercise on different fiber types can be studied, nerves can be transferred surgically from one type of muscle to another and accommodation and response assessed by letting different species into the treadmill chamber. Oxygen consumption can be measured and performance quantified.

Chemists in Delft in Holland, previously renowned

as the home of the great Dutch painter, Vermeer, and for its porcelain, have found cockroaches susceptible of study, too. They have extracted 200 μ g of the pheromone, periplanone B, from 75,000 virgin cockroaches. The chemical structure has been worked out so that we may soon know much more about how female roaches attract males. Male roaches have a chemical weapon, too, in the battle between the sexes — periplanone A, also known as seducin. Perhaps the rhythms of the Spanish dance as exemplified by the familiar *La Cucaracha* (the cockroach) were dictated subliminally — from roach via pheromone to man, yet another example of cosmopolitanism.

All this would have come as little surprise to Don Marquis, the newspaperman, poet and humorist, who one evening came upon a gigantic cockroach pumping the keys of his typewriter. Here are Marquis's observations:

"He did not see us, and we watched him. He would climb painfully upon the framework of the machine and cast himself with all his force upon a key, head downward, and his weight and the impact of the blow were just sufficient to operate the machine, one slow letter after another. He could not work the capital letters, and he had a great deal of difficulty operating the mechanism that shifts the paper so that a fresh line may be started. We never saw a cockroach work so hard or perspire so freely in all our lives before. After about an hour of this frightful difficult literary labor he fell to the floor exhausted."

archy thereafter always found a blank piece of paper in the typewriter for his nocturnal composition and offered us great insight into the character of roaches and of cats, particularly of his friend Mehitabel, who before her feline nights had in another era existed as Cleopatra. Marquis died in 1937, but not before he collected archy's works for publication, in so doing earning himself a place as pioneer in the field of animal energetics.

J.H.F.

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1. *Wall Street Journal* 1981 June 25.
2. Herreid CF II, Prawel DA, Full RJ. Energetics of running cockroaches. *Science* 1981; 212:331-2.

DMSO

Characteristic of our democratic society as it now deals with the medical profession are its ardor for regulation of the practitioner of physic and its effort to protect the public from the fruits of medical science. Yet these strictures have not repelled many invaders of our field who seem every year to intensify their efforts to get "a piece of the action." They often lobby very effectively in getting new privileges without clearly demonstrating the public's need or their own qualifications.

Drugs play a critical role in these considerations. Optometrists have vigorously sought and often gained permission to employ potent agents therapeutically. Pharmacists, frustrated because they can't apply their knowledge as effectively as they desire, are quite willing to relieve physicians of some of their patient re-

sponsibilities in prescribing. Others seeking self-knowledge, amusement and recreation and perhaps to save money don't bother with lobbying or literature: they simply treat themselves with a variety of agents, tested or untested.

Take DMSO, dimethyl sulfoxide, once a wonder drug almost guaranteed to grow hair inside and outside door knobs, although its mechanism of action, its effectiveness and its metabolism have not been well worked out. It is back with us, advertised on billboards in southwestern Virginia and offered to Forsyth county residents by at least one neighborhood hardware store. DMSO is apparently of some value for patients with interstitial cystitis but it is unlikely that bladder disease is suddenly epidemic in this part of the world. The compound is a good solvent but can there be that many vicious solutes in the Blue Ridges?

The Food and Drug Administration, hero when it

protects the public, villain when it will not release good drugs for use, has already confiscated one batch of the compound and has accused DMSO Inc. of Buffalo, N.Y., of misbranding the substance and making unwarranted medical claims. Meanwhile, the state of Montana this year exempted it from the state's new drug application requirements so that it can now be made and peddled within the state, human use by prescription only. Washington, Oregon, Louisiana and Florida have enacted similar legislation.

The results of current clinical trials are being awaited with interest. If DMSO does have therapeutic value for conditions other than interstitial cystitis, we need to know about it as soon as possible. Until we do know, we have no business recommending it and have every right to wonder why the sudden burst of advertising.

J.H.F.

PHILIP A. AUSTIN [b. 1819?]

It requires the broadest literary and classical education of boyhood to counteract the necessarily narrowing influence of the professional studies of manhood; and it demands the largest possible infusion of purely scientific teaching, during professional pupilage, to correct the matter-of-fact influence of the practice. . . .

It is by . . . early restriction of thought and action within the narrow grooves of life's future pursuits that a merchant so often loses all power to enjoy the fruit of his toil, a physician is unknown beyond the sick room, a surgeon contributes nothing to the cause of science, and a dentist holds no social position.

The Principles and Practice of Dentistry

From The Desk of The Managing Editor

IMPRESSIONS:

A LESSON IN DEMOCRACY

We waited for hours. The committee room pulsed with people's coming and going. Those reporters insecure enough to require front row seats sat while visions of lost deadlines danced in their heads. Lobbyists and other especially interested friends just danced. Staffers, armed with figures and facts, looked frayed. Legislators, while basking in the heat of the spotlight, wanted to rush through the ritual and go home. Republicans and Democrats, observers and participants all intermingled, talking in the present tense.

In another room (another world) the decisions were made (the rites of passage defined).

We knew all was done. What little money there was had been appropriated, however appropriately. Why were we waiting?

Because all was not done. It never is until the ayes and nays are counted, until every comma is in its place. (A typographical error could leave the \$64,000 question unanswered.)

So we waited to ensure (to hope?) that our input remained in; our compromises, promised.

The camera lights blinked, beckoning all to sit in their seats. The gavel pounded, persuading ears and eyes to turn to the podium. The huddled few emerged from the other room. The ritual began.

Order was called, computer print-outs passed out,

and the motions commenced. Recognizing only discussion deemed germane, the Chair conducted the voices with ease. The appropriations bill's special provisions — footnotes, so to speak, allocating (or not) funds to special needs — were treated separately. Questions were asked, answered, called and voted upon as the Chair auctioneered each piece of language. A chosen few paragraphs were destined displaced while a few chosen words were added, deleted, and/or re-arranged. The song of parliamentary procedure rang through the halls giving a semblance of harmony, however noisily.

Twisting and turning, the audience delayed judgment. The power of persuasion was powerless — a faint echo at best; the power of the vote — singing loudly and clearly — had taken its place.

Finally, the finale was played to the beat of the gavel, giving hope to some, disappointment to others (however expected). Reporters cornered names to scribble quotable quotes. Lobbyists and other especially interested friends patted backs and shook hands and heads. Staffers just shook heads. Legislators vainly avoided corners, keeping saliently silent. Having passed through the rites, we all went home to begin the work democracy had just delivered us.

A.A.H.

EDWARD AUGUSTUS HOLYOKE [1728-1829]

As to your Inquiry whether a collegiate Education be necessary, I answer No, but then, I am fully persuaded that at least a moderate Acquaintance with the Latin, and some even slight knowledge of the Greek Language is necessary; and still more that initiation into the Newtonian Philosophy and Chemistry, and in general into that Circle of Science which is taught by the Professor of Natural Philosophy in the Apparratus Chamber.

Opinion given to the Massachusetts Medical Society

National Institutes of Health

CONSENSUS DEVELOPMENT CONFERENCE STATEMENT CORONARY ARTERY BYPASS SURGERY: SCIENTIFIC AND CLINICAL ASPECTS

A Consensus Development Conference was held at the National Institutes of Health Dec. 3-5, 1980, to consider the status of coronary artery bypass surgery in relation to five specific questions:

1. What is overall management of patients with coronary artery disease — that is, in what context should coronary artery surgery be considered?
 2. What constitutes a reasonable diagnostic workup before recommending medical or surgical therapy?
 3. What is known about long-term survival with coronary artery bypass surgery in specific patient groups?
 4. What is known about long-term quality of life following coronary artery bypass surgery?
 5. What is the range of success rates for the procedure and what factors may be important in influencing the outcome?
1. What is overall management of patients with coronary artery disease — that is, in what context should coronary artery surgery be considered?

Coronary heart disease may be recognized by the physician as the clinical syndromes of angina pectoris, acute myocardial infarction, sudden cardiac arrest or ischemic cardiomyopathy. It may also be recognized in an asymptomatic form by detection of electro-

cardiographic evidence of prior myocardial infarction not recognized during the acute episode or by characteristic abnormalities of the electrocardiogram during exercise testing of apparently healthy persons. Once suspected by the physician, the diagnosis may be confirmed with various levels of certainty by utilization of one or more special diagnostic tests. The tests most commonly used include the electrocardiogram recorded during and after monitored graded exercise, in some institutions radionuclide studies of myocardial perfusion and ventricular function at rest and in response to exercise, and coronary arteriography with left ventricular angiography. In addition to confirming the diagnosis, such studies may provide information as to the pathological anatomy of the coronary arteries, the functional condition of the left ventricle and the overall response of the circulation to stress. These data may be combined with those obtained from the medical history and physical examination and with detailed knowledge of the natural history of the disease derived from many long-term follow-up studies of patients having such testing to form definable subsets of persons with widely different prognoses. Since a fundamental aspect of advanced coronary heart disease is a greatly increased probability of sudden death or myocardial infarction, such prognostic information strongly influences the decision on whether to add coronary artery bypass surgery to the overall lifelong medical management recommended. If the combined data indicate that the patient is at high risk of sudden death or infarction — for example, the patient with severe stenosis of the main trunk of the left coronary artery or severe and proximal stenosis of multiple major coronary branches — especially serious consideration is given for surgery. On the other hand, if the studies indicate that there is no critical stenosis of any major coronary branch, then clearly surgery is not indicated and medical treatment is advised.

But a very large percentage of patients fit between these extremes. In these patients, recommendations for medical or surgical therapy are based upon two fundamental questions. One, often most anxiety provoking to the patient, relates to the perception of the physician and the patient as to which course provides the greatest protection from disabling myocardial infarction or death. The second relates to which course will allow the patient to obtain a satisfactory quality of life according to his own standards. The answers to these questions remain highly judgmental. The answer to the first is heavily based upon the physician's interpretation of a large volume of sometimes contradictory data of extraordinary complexity. The answer to the second is heavily based upon the indi-



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vidual patient's response to medical therapy and to his or her priorities.

It is common practice for the physician and patient, when faced with this problem, to initiate comprehensive medical therapy with periodic reevaluation of the patient's response. It is critically important to recognize that appropriate, comprehensive medical care of the patient with coronary heart disease requires an intensive effort on the part of the physician, involving consideration of almost every aspect of the patient's life. It requires careful education of the patient and spouse on the nature of the disease and its management so as to allow adequate continuing self-care and to allow patients to participate knowledgeably in major decisions affecting their lives. It requires optimal control of risk factors for atherosclerosis and modification of lifestyle appropriate for the illness. This may affect both work and leisure. It may require long-term administration of nitroglycerin, beta-adrenergic blocking drugs, long-acting nitrates, antiar-

rhythmic agents and digitalis, among other agents. Effective and safe utilization of these drugs requires careful titration of dosage in relation to signs and symptoms. If, after such careful and intensive medical treatment, the patient believes that the quality of life is so adversely affected that other alternatives must be sought, surgical therapy may be advised for suitable patients. It must also be recognized that in many cases dissatisfaction with the altered lifestyle imposed by the illness is the result of inadequate attention to the details of management; failure of the physician to educate the patient concerning appropriate use of medications may be a particularly important cause of such difficulty.

In patients with chronic stable angina and good ventricular performance, aorto-coronary revascularization of the heart, whether with autologous vein or artery, has had a progressive decline in operative mortality to levels as low as 1% to 2% at major surgical centers. A corresponding decrease in perioperative

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myocardial infarction has been achieved. These results are assumed to relate to better management of anesthesia, more complete myocardial revascularization and improved methods for protecting the heart during coronary grafting. There seems to be no doubt that coronary bypass surgery can improve myocardial perfusion. Patency of aorto-coronary saphenous vein grafts has been in the range of 80% to 85% two years after operation. The procedure has been widely accepted as treatment in patients with unacceptable symptoms on medical therapy and in certain other subsets of patients with coronary artery disease.

2. What constitutes a reasonable diagnostic workup before recommending medical or surgical therapy?

A reasonable diagnostic workup of a patient with angina pectoris depends upon the clinical problem at issue. Instability and severity of angina, effect of disease on the quality of life, cardiac function and, to a certain degree, age play a role in determining the workup of each patient. The workup should be done as efficiently as possible to provide definite information. Unnecessary and redundant procedures should be avoided.

In some patients definition of the coronary anatomy is needed to determine operability. There is consensus that patients with stable angina whose quality of life is significantly impaired by their symptoms should undergo coronary arteriography. Further, in patients with unstable angina, coronary arteriography should be performed during the initial phase of hospitaliza-

tion; if maximal medical therapy does not relieve symptoms, this procedure should be done promptly. There is consensus that coronary artery bypass graft surgery is indicated in patients with unacceptable symptoms on appropriate medical treatment or with recurrent unstable angina, but the decision to operate must also depend on results of invasive studies.

In patients with typical angina not sufficiently severe to dictate surgery for relief of symptoms, noninvasive testing may be carried out initially in the attempt to identify those at high risk. However, there is lack of consensus on the value of noninvasive testing in the workup of such patients. Some physicians prefer coronary arteriography as the initial diagnostic procedure, particularly in the young patient. Others recommend exercise electrocardiography in an attempt to identify patients with significant left main or triple-vessel disease. Such patients will often show early and/or excessive ST segment deviations, ST segment depression prolonged into the recovery period, or decrease in blood pressure during the test. In these patients, coronary arteriography should be carried out and, if high-risk disease is found, coronary artery bypass surgery considered. The use of radio-nuclide studies to identify high-risk patients with left main and/or triple-vessel coronary disease needs further evaluation.

There is lack of consensus on the approach to evaluation of patients with questionable or atypical angina. In such patients exercise electrocardiography may help identify those with significant coronary disease; such identification may be enhanced by radio-nuclide studies in conjunction with exercise testing, particularly in patients with resting electrocardiographic abnormalities which impair the interpretation of the exercise electrocardiogram. The presence of coronary artery disease may be indicated by transient myocardial perfusion defects, wall motion abnormalities or an abnormal response of the left ventricular ejection fraction to exercise. Further research is needed to determine the role of noninvasive testing in patients with, or suspected of having, coronary artery disease.

Survivors of an acute myocardial infarction are at high risk of sudden death during the first year after the event. Recent studies have demonstrated one-year mortality ranging from 10% to 15% of all survivors. Several investigators have reported that these patients can be divided into high- and low-risk subgroups on the basis of clinical information and the results of such noninvasive testing as exercise electrocardiography, radionuclide studies of ventricular function, and ambulatory 24-hour electrocardiographic recording. Many believe that high-risk patients should undergo coronary arteriography and left ventricular angiography followed by surgery if coronary anatomy and left ventricular function are appropriate. It should be recognized, however, that the course of these patients undergoing surgery may differ from that of patients with stable or unstable angina and apparently similar coronary anatomy and ventricular function, in that

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they may exhibit a greater tendency for major ventricular arrhythmia. It is also recognized that there are as yet insufficient data to determine whether surgery will reduce the mortality of this subset of patients with coronary heart disease. Because of the relatively large number of patients included in this subset, and the present uncertainty as to the proper course of management, an urgent need exists for further investigation.

The problem of the patient with coronary disease presenting with congestive heart failure needs special consideration. It is important to determine whether a lesion amenable to surgery is contributing significantly to the heart failure, e.g., a ventricular aneurysm, severe mitral incompetence and/or a post-myocardial infarction ventricular septal defect. Two-dimensional echocardiography or radionuclide ventriculography may be noninvasive techniques of help in the evaluation of such patients.

3. What is known about long-term survival with coronary artery bypass surgery in specific patient groups?

The impact of coronary artery bypass graft surgery on survival has been the focus of extensive debate since its introduction. The severity of left ventricular dysfunction has been found to have an adverse effect on survival, and when surgical and medical therapy are compared this must be taken into account as well as the anatomic location and extent of disease defined by coronary arteriography.

It is well recognized that the interpretation of the results of surgical series by comparison with historical controls is difficult. It is especially hazardous in the assessment of coronary artery surgery because of marked changes between early and recent results, both for surgically treated and for medically treated patients. Several recently published series with long-term follow-up of patients undergoing coronary

In 1977, when the Veterans Administration compared Step-2 regimens in 450 mild hypertensive patients, which regimen was proven most effective?



artery bypass surgery have reported an impressively low operative mortality with remarkable long-term survival. At the same time, other studies have noted a marked improvement in recent years in the survival of medically treated patients. Accordingly, it seems unlikely that convincing evidence of the benefits of surgery in appropriately defined subgroups can be effectively assessed from other than adequately controlled studies.

There is consensus that coronary artery bypass surgery in patients with angina pectoris and greater than 50% narrowing of the luminal diameter of the left main coronary artery results in improved survival when compared with results in medically treated patients regardless of left ventricular function or degree of angina pectoris. (Survival rates with medical and surgical therapy were 60% and 89%, respectively, at four years in the V.A. trial, and 67% and 89% at five

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1. Ginsburg CM, McCracken GH Jr, Zweighaft TC, Clahsen JC. Comparative pharmacokinetics of cyclacillin and amoxicillin in infants and children. *Antimicrob Ag Chemother* 19:1085-1088 (June) 1981.

2. Multicenter trials. Data to be published.

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3. Data on file. Wyeth Laboratories.
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Indications

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Tonsillitis and pharyngitis caused by Group A beta-hemolytic streptococci

Branchitis and pneumonia caused by *S. pneumoniae* (formerly *D. pneumoniae*)

Otitis media caused by *S. pneumoniae* (formerly *D. pneumoniae*) and *H. influenzae*

Acute exacerbation of chronic bronchitis caused by *H. influenzae**

*Though clinical improvement has been shown, bacteriologic cures cannot be expected in all patients with chronic respiratory disease due to *H. influenzae*.

SKIN AND SKIN STRUCTURES (integumentary) infections caused by Group A beta-hemolytic streptococci and staphylococci, non-penicillinase producers.

URINARY TRACT INFECTIONS caused by *E. coli* and *P. mirabilis*. (This drug should not be used in any *E. coli* and *P. mirabilis* infections other than urinary tract.)

NOTE: Perform cultures and susceptibility tests initially and during treatment to monitor effectiveness of therapy and susceptibility of bacteria. Therapy may be instituted prior to results of sensitivity testing.

Contraindications Contraindicated in individuals with history of an allergic reaction to penicillins.

Warnings Cyclacillin should only be prescribed for the indications listed herein.

Cyclacillin has less *in vitro* activity than other drugs of the ampicillin class. However, clinical trials demonstrated it is efficacious for recommended indications.

Serious and occasional fatal hypersensitivity (anaphylactoid) reactions have been reported in patients on penicillin. Although anaphylaxis is more frequent following parenteral use, it has occurred in patients on oral penicillins. These reactions are more apt to occur in individuals with history of sensitivity to multiple allergens. There are reports of patients with history of penicillin hypersensitivity reactions who experienced severe hypersensitivity reactions when treated with a cephalosporin. Before penicillin therapy, carefully inquire about previous hypersensitivity reactions to penicillins, cephalosporins and other allergens. If allergic reaction occurs, discontinue drug and initiate appropriate therapy. Serious anaphylactoid reactions require immediate emergency treatment with epinephrine. Oxygen, I.V. steroids, airway management, including intubation, should also be administered as indicated.

Precautions Prolonged use of antibiotics may promote overgrowth of nonsusceptible organisms. If superinfection occurs, take appropriate measures.

PREGNANCY: Pregnancy Category B. Reproduction studies performed in mice and rats at doses up to 10 times the human dose revealed no evidence of impaired fertility or harm to the fetus due to cyclacillin. There are, however, no adequate and well-controlled studies in pregnant women. Because animal reproduction studies are not always predictive of human response, use this drug during pregnancy only if clearly needed.

NURSING MOTHERS: It is not known whether this drug is excreted in human milk. Because many drugs are, exercise caution when cyclacillin is given to a nursing woman.

Adverse Reactions Oral cyclacillin is generally well tolerated. As with other penicillins, untoward sensitivity reactions are likely, particularly in those who previously demonstrated penicillin hypersensitivity or with history of allergy, asthma, hay fever, or urticaria. Adverse reactions reported with cyclacillin: diarrhea (in approximately 1 out of 20 patients treated), nausea and vomiting (in approximately 1 in 50), and skin rash (in approximately 1 in 60). Isolated instances of headache, dizziness, abdominal pain, vaginitis, and urticaria have been reported. (See **WARNINGS**) Other less frequent adverse reactions which may occur and are reported with other penicillins are anemia, thrombocytopenia, thrombocytopenic purpura, leukopenia, neutropenia and eosinophilia. These reactions are usually reversible on discontinuation of therapy.

As with other semisynthetic penicillins, SGOT elevations have been reported.

As with antibiotic therapy generally, continue treatment at least 48 to 72 hours after patient becomes asymptomatic or until bacterial eradication is evidenced. In Group A beta-hemolytic streptococcal infections, at least 10 days' treatment is recommended to guard against risk of rheumatic fever or glomerulonephritis. In chronic urinary tract infection, frequent bacteriologic and clinical appraisal is necessary during therapy and possibly for several months after. Persistent infection may require treatment for several weeks.

Cyclacillin is not indicated in children under 2 months of age. Patients with Renal Failure Cyclacillin may be safely administered to patients with reduced renal function. Due to prolonged serum half-life, patients with various degrees of renal impairment may require change in dosage level (see **DOSAGE AND ADMINISTRATION** in package insert).

Dosage (Give in equally spaced doses)

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Branchitis and Pneumonia		
Mild or Moderate Infections	250 mg q.i.d.	50 mg/kg/day q.i.d.
Chronic Infections	500 mg q.i.d.	100 mg/kg/day q.i.d.
Otitis Media	250 mg to 500 mg q.i.d.†	50 to 100 mg/kg/day†
Skin & Skin Structures	250 mg to 500 mg q.i.d.†	50 to 100 mg/kg/day†
Urinary Tract	500 mg q.i.d.	100 mg/kg/day

*Dosage should not result in a dose higher than that for adults. †depending on severity

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years in the European trial. Left main coronary artery stenosis of this severity is reported in approximately 10% of patients undergoing coronary arteriography.)*

There are few prospective randomized trials with medically treated controls to assess the impact of surgery on survival. Furthermore, the application of such results to the overall population with symptomatic coronary artery disease, treated in many centers, must be done with caution. This compounds the problem of judging the effects of coronary artery bypass surgery on survival in patients with three-vessel disease because of conflicting data. (Three-vessel coronary artery disease of surgical significance is reported in 30% to 40% of angiographic studies.)* The V.A. Cooperative Randomized Trial was reviewed. The initial report failed to demonstrate improved survival with surgery in patients with three-vessel disease, the majority of whom had moderate impairment of left ventricular function. However, if one accepts the analysis of the V.A. data for the 10 hospitals (which include 87% of the patients) in which the average operative mortality was 3.4% and eliminates the three outliers in which the average operative mortality was 23%, a significantly improved survival with surgery is observed. There is also evidence which suggests improved survival in patients with three-vessel disease and moderate impairment of global left ventricular function, i.e., left ventricular ejection fraction in the range of 25% to 50%.

Data were reviewed that suggested improved survival after coronary artery bypass grafting in patients with three-vessel disease and good left ventricular function defined as left ventricular ejection fraction greater than 50%. The European Collaborative Randomized Trial demonstrates improved survival for surgically treated patients in this subset. Though the differences observed in European trial are impressive (survival rate at 60 months was 82% for the medical group and 94% for the surgical group), there is consensus that confirmation of these findings is needed before a firm conclusion can be reached on the question of improved survival in patients with three-vessel disease and good left ventricular function as defined. Other smaller randomized trials and observational studies have yielded conflicting results in this subset.

The two large randomized studies examined do not provide evidence for improved survival with surgery of patients with two-vessel disease regardless of the status of the left ventricle, while some studies have suggested improvement in survival with surgery of patients with two-vessel disease and moderate impairment of left ventricular function. There is no current evidence to support improved after surgery in patients with single-vessel disease regardless of left ventricular functional status.

We do not find data adequate to substantiate improved survival with surgery in patients with severe

degrees of left ventricular functional impairment, i.e., left ventricular ejection fraction less than 20%.

Review of the National Heart, Lung, and Blood Institute Multicenter Randomized Unstable Angina Pectoris Trial, which excluded patients with left main coronary artery disease or persistent unstable angina, has failed to show improved survival of those treated by urgent surgery compared to those treated exclusively by medical management unless surgery was dictated by chronic symptomatology. The extent to which results in this highly selected group of patients can be extrapolated to other subsets of unstable angina patients is not established.

It is important to re-emphasize that surgery may still be appropriate in patient subsets where evidence of improved survival with surgery is lacking if symptoms of myocardial ischemia are sufficiently severe or if large areas of myocardium are in jeopardy. Further attempts should be encouraged at identifying other variables which may affect survival and thus provide methods for more critical testing of therapeutic effectiveness.

4. What is known about the long-term quality of life following coronary artery bypass surgery?

There are few objective criteria by which quality of life can be assessed following coronary artery bypass surgery. The symptoms of angina pectoris is reported to be relieved to 80% to 90% of patients undergoing operation for chronic stable angina. Bypass surgery has reduced the subsequent number of cardiac-related events, amount of medication required and frequency of hospitalizations. Most postoperative patients have been able to increase their exercise capacity and improve their New York Heart Association functional class. This has been documented by improvements in functional exercise testing, angina threshold, left ventricular wall motion, left ventricular ejection fraction during exercise, indices of myocardial oxygen consumption during exercise and greater lactate extraction across the myocardium.

Improvements in symptoms and functional capacity associated with coronary bypass surgery should theoretically result in more individuals returning to gainful employment. The consensus is that this has not occurred. It is recognized that physicians do not make consistent recommendations to patients regarding exercise potential and employability after successful coronary bypass surgery. Factors extraneous to the patient-physician relationship such as preoperative work status, availability of nonwork income, perception of health, age, level of education, and employer attitudes all appear to influence the postoperative employment status. Whether the patient returns to work after coronary bypass surgery depends on too many nonmedical factors to allow any conclusions regarding efficacy of therapy based on return to work.

It is reported that angina will recur or progress after bypass surgery in about 5% of patients per year. In approximately two-thirds of these patients, symptoms are related to closure of the vein graft or progression of

* Estimates of prevalence of lesions found on coronary angiography have a significant dependence on the criteria for angiography; thus considerable variability may exist among individual institutions.

disease. This may be related to persistent elevation of blood lipids or poor control of other risk factors. The entire question of mechanisms involved in progression of atherosclerosis in the coronary circulation and in grafts is important and requires further investigation.

Similar results regarding quality of life have been observed in patients undergoing coronary bypass surgery for unstable angina, but follow-up data are of shorter duration than those cited, which are based predominantly upon patients with stable angina.

5. What is the range of success rates for the procedure and what factors may be important in influencing the outcome?

Where bypass surgery is performed may significantly influence the rate of success of the operation. Excellence can be achieved in a variety of hospitals provided appropriate medical and technical support is available to complement an experienced and skilled surgical team. This would include expertly performed angiography, the availability of other subspecialty resources and appropriate laboratory and blood banking facility.

Successful intraoperative management, reflected in low rates of mortality, perioperative infarction and other postoperative complications, and short hospital convalescence will depend not only upon surgical skill and judgment, but also upon the availability of com-

petent anesthesiologists, efficient extracorporeal support, optimal myocardial preservation techniques and minimal duration of myocardial ischemia consistent with optimal revascularization.

Postoperative management requires a suitable intensive care facility, dedicated personnel and the availability of circulatory support systems.

From experience to date, the following can be expected:

- In patients with chronic stable angina pectoris and normal or moderately impaired left ventricular function, a hospital mortality rate of 4% is generally attainable, and a rate of less than 1% is possible. The incidence of electrocardiographically documented perioperative infarction might approximate 5%.
- In the syndrome of unstable angina pectoris, early results will depend upon the institution's approach to management. A somewhat higher incidence of morbidity and mortality may result from earlier operative intervention compared to lesser risks after a longer period of stabilization and exclusion of patients with evolving infarctions. With initial stabilization and nonemergency operation, hospital mortality and perioperative infarction rates should approach those for patients with chronic stable angina pectoris. Even with early intervention, a hospital mortality of 6% is generally attainable, and perioperative infarction might approximate 10%.

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- The existence of left main coronary artery involvement has been associated with high operative risks in the past. Currently, and except in emergencies, individuals with this lesion can be operated upon with the expectation of morbidity and mortality rates only slightly higher than for those with chronic stable angina with other coronary arterial findings.
- Bypass grafting in patients with severe left ventricular dysfunction has been associated with high operative morbidity and mortality. Recent improvements in perioperative management have lessened the risks. In patients with very severe myocardial dysfunction — that is, ejection fractions of less than 25% — a hospital mortality rate no greater than 15% to 20% is generally achievable.
- At this time there is insufficient information to identify the role of bypass surgery in patients with acute myocardial infarction, or intractable ventricular arrhythmias or in asymptomatic patients in myocardial jeopardy.

For all categories of patients, average one-year graft patency of 85% to 90% should be achievable. The roles of anticoagulant and antiplatelet therapy, and other measures which may affect late graft patency

and retard arteriosclerosis are unknown and require further study.

CONCLUSION

It is the consensus of the panel that coronary artery bypass surgery represents a major advance in the treatment of patients with coronary arterial disease. Evidence has been presented to support the conclusion that improvement in the quality of life, decreased myocardial ischemia, and increased survival in selected subsets of patients have resulted following coronary artery bypass surgery.

This Consensus Conference on *Coronary Artery Bypass Surgery: Scientific and Clinical Aspects* was sponsored by the National Heart, Lung, and Blood Institute in conjunction with the National Center for Health Care Technology and with the assistance of the Office for Medical Applications of Research, Office of the Director, NIH. The Consensus Development Panel consisted of: Robert L. Frye, M.D. (Chairman), Mayo Clinic; W. Gerald Austen, M.D., Massachusetts General Hospital; Paul A. Ebert, M.D., University of California, San Francisco; Charles K. Francis, Jr., M.D., Yale University School of Medicine; Nicholas T. Kouchoukos, M.D., University of Alabama in Birmingham; Paul Meier, Ph.D., University of Chicago; Hiltrud S. Mueller, M.D., St. Louis University School of Medicine; Elliot Rapaport, M.D., University of California, San Francisco; T. Joseph Reeves, M.D., St. Elizabeth's Hospital, Beaumont, Texas; David C. Sabiston Jr., M.D., Duke University Medical Center; William C. Sheldon, M.D., Cleveland Clinic Foundation; Robert L. Vitu, M.D., Michigan State University; James H. Ware, Ph.D., Harvard School of Public Health.

Special participants in the discussions of the panel included: Samuel Gorovitz, Ph.D., University of Maryland; David C. Levin, M.D., Harvard Medical School; William B. Stason, M.D., Harvard School of Public Health.

Copies of this consensus statement may be obtained from the Office for Medical Applications of Research, National Institutes of Health, Building 1, Room 216, Bethesda, Md. 20205.

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for a program only when these differ from the place and source to write "for information."

January 13

"Laboratory Diagnosis of Endocrine Diseases"

Place: Pitt County Memorial Auditorium, Greenville

Fee: \$50

Credit: 7 hours, AAFP applied for

For Information: F. M. Simmons Patterson, M.D., Assistant Dean
for Continuing Medical Education, East Carolina University
School of Medicine, Greenville, N.C. 27834

January 20

"Physician Health and Effectiveness — The Impaired Physician"

Place: Central Carolina Hospital

Fee: \$12

Credit: 2 hours

For Information: Robert S. Cline, M.D., 1135 Carthage Street,
Sanford, N.C. 27330, 919-774-4100, ext. 394

January 22-23

"Clinical Urology"

Place: Bowman Gray School of Medicine

Fee: \$100

Credit: 3 hours

For Information: Emery C. Miller, M.D., Assoc. Dean for Con-
tinuing Education, Bowman Gray School of Medicine, 300 S.
Hawthorne Road, Winston-Salem, N.C. 27103, 919-748-4450

January 23

"Third Annual Pulmonary Disease Update: A Breath of Spring"

Place: Pitt County Memorial Hospital Auditorium, Greenville,
N.C.

Fee: \$50

Credit: 6 hours, AAFP applied for

For Information: F. M. Simmons Patterson, M.D., Assistant Dean
for Continuing Medical Education, East Carolina University
School of Medicine, Greenville, N.C. 27834

February 10

"Clinical Psychiatry Update 1982"

Place: Pitt County Memorial Hospital Auditorium, Greenville

Fee: \$25

Credit: 3 hours, AAFP applied for

For Information: F. M. Simmons Patterson, M.D., Assistant Dean
for Continuing Medical Education, East Carolina University
School of Medicine, Greenville, N.C. 27834

March 3-5

"Techniques in G.I. Radiology"

Place: Bowman Gray School of Medicine

Credit: 18 hours

For Information: Emery C. Miller, M.D., Associate Dean for Con-
tinuing Education, Bowman Gray School of Medicine, 300 S.
Hawthorne Road, Winston-Salem, N.C. 27103, 919-748-4450

In 1979, when results were published
for the five-year, 10,000-patient
Hypertension Detection and
Follow-up Program (HDFP study),
which Step-2 regimen was preferred
and was deemed effective
without significant adverse effects?²



March 10

"Current Clinical Problems in Family Practice"

Place: Pitt County Memorial Hospital Auditorium, Greenville

Fee: \$50

Credit: 7 hours, AAFP applied for

For Information: F. M. Simmons Patterson, M.D., Assistant Dean for Continuing Medical Education, East Carolina University School of Medicine, Greenville, N.C. 27834

March 28-29

"Advanced Life Support Provider"

Place: Bowman Gray School of Medicine

Fee: \$175

Credit: 12 hours

For Information: Emery C. Miller, M.D., Associate Dean for Continuing Education, Bowman Gray School of Medicine, 300 S. Hawthorne Road, Winston-Salem, N.C. 27103, 919-748-4450

April 2-3

"Frank R. Lock Symposium in Obstetrics & Gynecology"

Place: Bowman Gray School of Medicine

Fee: \$150

Credit: 10 hours, AAFP applied for

For Information: Emery C. Miller, M.D., Associate Dean for Continuing Education, Bowman Gray School of Medicine, 300 S. Hawthorne Road, Winston-Salem, N.C. 27103, 919-748-4450

April 14

"Infectious Diseases Update 1982"

Place: Pitt County Memorial Hospital, Auditorium, Greenville

Fee: \$50

Credit: 6 hours, AAFP applied for

For Information: F. M. Simmons Patterson, M.D., Assistant Dean for Continuing Medical Education, East Carolina University School of Medicine, Greenville, N.C. 27834

April 19-22

"Current Concepts in Diagnostic Imaging"

Place: Duke University Medical Center

Fee: \$400 (\$200 if in training)

Credit: 30 hours

For Information: Donald R. Kirks, M.D., Program Director, Department of Radiology — Box 3834, Duke University Medical Center, Durham, N.C. 27710

April 23-24

"Practical Pediatrics"

Place: Bowman Gray School of Medicine

Fee: \$50

Credit: 9 hours, AAFP applied for

For Information: Emery C. Miller, M.D., Associate Dean for Continuing Education, Bowman Gray School of Medicine, 300 S. Hawthorne Road, Winston-Salem, N.C. 27103, 919-748-4450

April 24-25

"7th Annual Radiology Update"

Place: Bowman Gray School of Medicine

Fee: \$75

Credit: 9 hours

For Information: Emery C. Miller, M.D., Associate Dean for Continuing Education, Bowman Gray School of Medicine, 300 S. Hawthorne Road, Winston-Salem, N.C. 27103, 919-748-4450

OUT OF STATE — SOUTHEASTERN REGION

January 13-15

"Defined Diets and Childhood Hyperactivity"

Place: National Institutes of Health, Bethesda, Maryland

For Information: Dorothy D. Sogn, M.D., National Institute of Allergy and Infectious Diseases, Building 31, Room 7A-50, Bethesda, Md., 20205, 301-496-1886

January 22-23

"S.C. Chapter of A.C.S. — Annual Surgical Symposium"

Place: Charleston, South Carolina

For Information: Robert S. Cathcart, III, M.D., 158 Rutledge Ave., Charleston, S.C. 29403, 803-723-6426

January 28-30

"Newer Management & Treatment Techniques in Cardiac Diseases for the Practicing Cardiologist & Physician"

Place: New Orleans, Louisiana

For Information: Registration Secretary, Extramural Programs Department, American College of Cardiology, 9111 Old Georgetown Road, Bethesda, Md. 20014

February 11-13

"Perspectives on New Diagnostic and Therapeutic Techniques in Clinical Cardiology"

Place: Lake Buena Vista, Florida

For Information: Registration Secretary, Extramural Programs Department, American College of Cardiology, 9111 Old Georgetown Road, Bethesda, Md. 20014

March 22-April 2

"Clinical Cytopathology for Pathologists"

Place: The Johns Hopkins Hospital, Baltimore, Maryland

Credit: 125 hours

For Information: (Deadline January 27) John K. Frost, M.D., 610 Pathology Building, The Johns Hopkins Hospital, Baltimore, Md. 21205

March 31-April 2

"Current Concepts of Clinical Infectious Diseases"

Place: Charlottesville, Virginia

For Information: Postgraduate Courses Department, American College of Physicians, 4200 Pine Street, Philadelphia, PA 19104, 800-523-1546

April 22-24

"Pediatric Springfest"

Place: Williamsburg, Virginia

For Information: Kathy E. Johnson, Box 48, MCV Station, Richmond, VA, 23298, 804-786-0494

The items listed in the above column are for the three months immediately following the month of publication. Requests for listing should be received by "WHAT? WHEN? WHERE?", P.O. Box 27167, Raleigh, by the 1st of the month prior to the month in which they are to appear. A "Request for listing" form is available upon request.

AUXILIARY TO THE NORTH CAROLINA MEDICAL SOCIETY

WHO IS VOLUNTEERING AND WHY ARE THEY DOING IT?

The North Carolina Medical Society Auxiliary depends on volunteers for its existence. Membership is open to all spouses of physicians, but not all join. If leadership is ineffective, the auxiliary may lose members who were once supportive and active.

The immediacy of this was vividly demonstrated to the participants at the Auxiliary Fall Workshop held in Southern Pines September 21, 1981. Tom Connelly, Ed.D., Dean of the School of Nursing and Health Services at Western Carolina University, led a three-hour volunteer training seminar. In light of the impending federal cutbacks in human service funding, Dr. Connelly's message was particularly timely for all health professionals as well as the volunteer sector. With his permission, I base my column this month on the content of his presentation.

Who are volunteers? Twenty-four percent of all Americans participate in voluntary activities according to the latest census data. Fifty percent of the volunteers are between the ages of 25 and 44; 57% are women.

What do volunteers do? Volunteer effort is currently declining in institutional service (churches, schools, hospitals) and increasing in neighborhood crisis-oriented programs (hospice, battered women shel-

ter). However, 50% of all such effort is still in religious activities, with education and hospital service tied for second place at 15% each. Other areas of service are youth, recreation, social and/or welfare, civic and community, professional organizations and social clubs.

There are three main volunteer activities — executive and policy making (boards of directors); administrative (fund raising, project management); and direct service (addressing envelopes, serving people directly). Volunteers tend to be project-oriented and rarely will engage in routine activity. The one exception is religious work which brings forth long-term, continuing commitment from participants. Seventy-five percent of volunteers will do less than 10 hours of service per month and less than half will volunteer once a week.

Social forces influence volunteer trends. Today's economic conditions are forcing many households to

become two-career families as the wife goes to work even when the husband is well paid as with physicians and other professionals. The employment options for women as well as the emphasis on leisure time activities for self and family may have a profound affect on volunteerism.

Why do people volunteer? All people have needs beyond those of basic survival. Those who volunteer do so to satisfy some inner need. Perhaps it is a social need — to meet people or get involved in the community. Or it may be a need to achieve — to use their talents or learn new skills. For some it may be a financial need — to “make contacts” that will increase current earnings or provide employment opportunities.

A volunteer will also have expectations concerning the activity. If one wants to work directly with people and is assigned to do filing, the volunteer may not return. An effective leader will make an effort to blend

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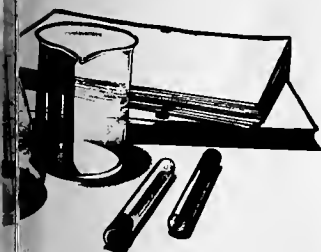
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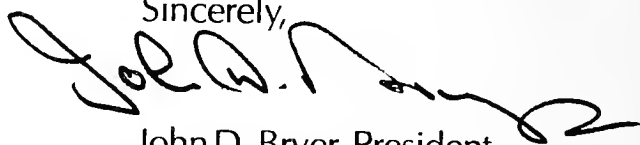
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INDICATIONS AND USAGE: Treatment of signs and symptoms of rheumatoid arthritis and osteoarthritis during acute flares and in the long-term management of these diseases. Safety and effectiveness have been established for Functional Class IV rheumatoid arthritis.

Relief of mild to moderate pain.

CONTRAINDICATIONS: Patients hypersensitive to ibuprofen, or with the syndrome of nasal polyps, edema and bronchospastic reactivity to aspirin or nonsteroidal anti-inflammatory drugs (see **WARNINGS**).

WARNINGS: Anaphylactoid reactions have occurred in patients hypersensitive to aspirin (see **CONTRAINDICATIONS**). Peptic ulceration and gastrointestinal bleeding, sometimes severe, have been reported. Peptic ulceration and gastrointestinal bleeding times severe, have been reported. Peptic ulceration, or gastrointestinal bleeding can occur; however, an association has not been established. Rufen should be given under close supervision to patients with a history of upper gastrointestinal tract disease and only after consulting the **ADVERSE REACTIONS**.

In patients with active peptic ulcer and active rheumatoid arthritis, nonulcerogenic drugs, such as H₂ antagonists, should be attempted. If Rufen must be given, the patient should be under close supervision for signs of gastrointestinal bleeding.

PRECAUTIONS: Blurred and/or diminished vision, scotomata, and/or changes in color vision have been reported. If developed, discontinue Rufen and admit to an ophthalmologic examination.

Fluid retention and edema have been associated with Rufen; caution should be used in patients with a history of cardiac decompensation.

Rufen can inhibit platelet aggregation and prolong bleeding time. Use with caution in patients with bleeding disorders and those taking anticoagulants.

Patients should report signs or symptoms of gastrointestinal ulceration or bleeding, blurred vision or eye symptoms, skin rash, weight gain or edema.

To avoid exacerbation of disease or adrenal insufficiency, patients on prolonged corticosteroid therapy should be tapered slowly when adding Rufen.

DRUG INTERACTION: Coumarin-type anticoagulants. The physician should be cautious when administering Rufen to patients on anticoagulants.

Aspirin. Concomitant use may decrease Rufen levels.

PREGNANCY AND NURSING MOTHERS: Rufen should not be taken during pregnancy nor by nursing mothers.

ADVERSE REACTIONS

Incidence greater than 1%

Gastrointestinal: The most frequent adverse reaction is gastrointestinal (4% to 16%). Includes nausea, epigastric pain, heartburn, diarrhea, abdominal discomfort, nausea and vomiting, indigestion, constipation, anal cramps or pain, fullness of GI tract (bloating, flatulence). **Central Nervous System:** dizziness, headache, nervousness. **Dermatologic:** rash (including maculopapular type), pruritus. **Special Senses:** tinnitus. **Metabolic:** decreased appetite, edema, fluid retention. Fluid retention generally responds promptly to discontinuation (see **PRECAUTIONS**).

*Incidence 3% to 9%.

Incidence less than 1 in 100

Gastrointestinal: gastric or duodenal ulcer with or without perforation, hemorrhage, melena. **Central Nervous System:** depression, insomnia. **Dermatologic:** vesiculobullous eruptions, urticaria, erythema multiforme. **Special Senses:** amblyopia (see **PRECAUTIONS**). **Hematologic:** leukopenia, decreased hemoglobin and hematocrit. **Cardiovascular:** congestive failure in patients with marginal cardiac function, elevated blood pressure.

Causal relationship unknown

Gastrointestinal: Hepatitis, jaundice, abnormal liver function. **Central Nervous System:** paresthesia, hallucinations, dream abnormalities. **Dermatologic:** Stevens-Johnson syndrome. **Special Senses:** conjunctivitis, diplopia, optic neuritis. **Hematologic:** hemolytic anemia, thrombocytopenia, granulocytopenia, bleeding episodes. **Allergic:** fever, serum sickness, erythematous syndrome. **Endocrine:** hypoglycemia. **Cardiovascular:** arrhythmia (sinus tachycardia, bradycardia, and palpitations). **Renal:** decreased creatinine clearance, polyuria, hematuria.

OVERDOSAGE: Acute overdosage, the stomach should be emptied. Rufen is acidic and excreted in the urine; alkaline diuresis may benefit.

DOSAGE AND ADMINISTRATION: Rheumatoid arthritis and osteoarthritis, including flareups of chronic disease: Suggested dosage 400 mg t.i.d. or q.i.d. Mild to moderate pain: 400 mg every 4 to 6 hours as necessary for relief of pain. Do not exceed 2,400 mg per day.

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the organization's needs with the expectations, needs and goals of the volunteer.

What is the challenge to the auxiliary? Voluntary organizations are "buying peoples' time for nothing." Leaders of these groups must provide motivation and rewards for people to volunteer. Dr. Connelly presented ten suggestions for organizational success:

1. Encourage problem solving
2. Base authority on competence rather than position
3. Facilitate trust and collaboration among members
4. Reward members for personal development as well as productivity
5. Foster a sense of ownership and involvement among members
6. Structure jobs for maximum self-management
7. Conduct work efficiently
8. Help members improve their abilities to cope with conflict
9. Adapt quickly to change
10. Generate high enthusiasm among members

Dr. Connelly's presentation reinforced the belief that volunteerism is important and worthwhile. In particular, auxiliary service has yielded results over the years that have been worthy of pride both in and outside the medical community. To those who are

active participants, carry on. To those who are not, come join us!

ANITA D. TAYLOR, Winston-Salem, N.C.

News Notes from the UNIVERSITY OF N.C.-CHAPEL HILL SCHOOL OF MEDICINE & MEMORIAL HOSPITAL

Two faculty members of the University of North Carolina at Chapel Hill School of Medicine were elected members of the National Academy of Sciences' Institute of Medicine.

Dr. Mary Ellen Jones, Kenan professor and chairman of the Department of Biochemistry and Nutrition, and Dr. Raymond P. White Jr., professor of oral surgery and associate dean of the medical school, were among 50 new members of the institute, bringing its total active membership to 371.

Jones, a distinguished biochemist, is a specialist in metabolism and its regulation. In 1955 she and Drs. Leonard Spector and Fritz Lipmann, both of Rockefeller University in New York, discovered carbamyl phosphate, a compound essential to all living cells.

She is the first woman to hold a Kenan professor-

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ship at UNC-CH and the first to chair a department in the School of Medicine.

White, who serves as an associate chief of staff at North Carolina Memorial Hospital, was dean of the School of Dentistry from 1974 until August of this year. During his tenure the school continued to be recognized as one of the leading institutions of its kind in the nation. In 1980 it received one of the highest evaluations ever given by the American Dental Association's Committee on Dental Accreditation.

He has been active in national scientific organizations and was the American Society of Oral Surgeons' Committeeman of the Year in 1976. White also has been a prolific researcher and author.

Clinical studies to test the effectiveness of a new synthetic growth hormone began Oct. 20 at the School of Medicine of the University of North Carolina at Chapel Hill.

The medical school is one of 10 medical facilities throughout the country selected to test the synthetic hormone produced by Genentech Inc.

The hormone will be tested on two children suffering from hypopituitary dwarfism, a growth deficiency caused by an absence of the growth hormone normally produced in the pituitary gland. The two patients at UNC-CH are among some 20 involved in the second phase of clinical trials required by the U.S. Food and Drug Administration.

Dr. Louis E. Underwood professor of pediatrics is co-investigator of the study at Chapel Hill along with Dr. Judson J. Van Wyk, professor and chief of the division of pediatric endocrinology.

Dr. Eugene S. Sandler, associate professor of dental ecology and pedodontics, has been appointed director of the dental clinic at North Carolina Memorial Hospital and director of the hospital's dental general practice residency program.

The appointment, effective Sept. 15, was announced by Dr. Raymond P. White Jr., chief of hospital dentistry at N.C. Memorial and Dr. Donald Warren, Chairman of the Dental Ecology Department.

Sandler has been director of dental services at the Orange County Health Department since 1979. He will continue to hold this position in addition to his new duties.

A native of Massachusetts, Sandler received his D.D.S. from New York University in 1958 and his M.Sc.D. and a certificate of advanced graduate studies in pedodontics from the Boston School of Graduate Dentistry in 1966. His major research interests are treatment of exceptional children and community and preventive dentistry.

Sandler has been an associate professor at the UNC-CH School of Dentistry since 1979. He serves as a consultant in dentistry for North Carolina Headstart programs and project director of the Robert Wood Johnson Ambulatory Care Program which has set up

two dental clinics in cooperation with the Orange County Health Department.

A relatively recent development in basic medical research, the fluorescence photobleaching technique, was the topic of an international workshop Oct. 25-29 at the University of North Carolina at Chapel Hill.

"The UNC Department of Anatomy and laboratories for cell biology have adopted a plan to host an international workshop in some area of contemporary biology each academic year," said Dr. Charles R. Hackenbrock, chairman of anatomy and director of the department's laboratories for cell biology.

The first departmental workshop, which has been organized by Dr. Kenneth A. Jacobson, associate professor of anatomy, will bring together people, for the first time, who have been working on the photobleaching technique to share the results and the interpretation of their research.

The approximately 60 participants have been drawn from Canada, Europe, Israel and the United States, with an additional 10-15 from the University.

Funding for the workshop has been provided by the UNC-CH School of Medicine, Burroughs Wellcome Co., the National Science Foundation and the U.S. Army Research Office.

Joyce L. Mackinnon has been promoted to assistant professor in the School of Medicine's department of medical allied health professions effective Oct. 1.

The appointments of four assistant professors in the School of Medicine have been announced by Chancellor Christopher C. Fordham III.

Dr. Robert E. Jay and Theodore I. King II were appointed assistant professors of medical allied health professions effective Aug. 1. Dr. David Siscovick was appointed assistant professor of medicine effective Sept. 1 and Dr. Edward Teeple Jr. was appointed assistant professor of anesthesiology effective July 1.

Jay was an assistant professor at the University of Tulsa for five years before coming to UNC-CH. Previously he was a speech clinician and then a speech pathologist and special education team leader at the University of Northern Colorado.

An Indiana native, Jay earned his B.A. in 1969 from the University of Colorado, his M.S. in 1971 from East New Mexico University and his Ph.D. in 1977 from Vanderbilt University.

King was an instructor at the University of Wisconsin at Madison for a year before joining the faculty. Previously he was senior staff therapist at University Hospital of the University of Michigan, and he has worked as an occupational therapist and a biology teacher in Michigan public schools.

A Michigan native, he earned his B.S. in 1970 from Michigan State University, his M.O.T. in 1978 from

Western Michigan University and his Ph.D. in 1980 from Michigan State.

Siscovick was a fellow at the University of Washington for the last two years, and previously he served his internship and residency there.

A Maryland native, he earned his B.A. in 1971 from the University of Pennsylvania and his M.D. in 1976 from the University of Maryland.

Teeple has been a fellow in anesthesiology at UNC-CH since last year, having previously served his internship at Overlook Hospital in Summit, N.J., and his residency at Jackson Memorial Hospital in Miami, Fla.

A New Jersey native, he earned his B.S. in 1973 from Rutgers University and his M.D. in 1977 from the New Jersey College of Medicine.

Some 50 postdoctoral fellows and core faculty members of the Cancer Research Center participated in the Sixth Annual Postdoc-Faculty Research Days at the Quail Roost Conference Center in Rougemont Oct. 1 and 2.

Guest speaker was Dr. Barney C. Lepovetsky, chief

of the manpower branch of the National Cancer Institute. Faculty members who presented talks included: Dr. Clyde Hutchinson III, professor of bacteriology and immunology; Dr. Steven Bachenheimer, associate professor of bacteriology and immunology; Dr. Jack Griffith, associate professor of bacteriology and immunology; Dr. David Klapper, assistant professor of bacteriology and immunology; Dr. Stephen Haskill, associate professor of obstetrics and gynecology and bacteriology and immunology; Dr. Philip Carl, research associate professor of pharmacology; Dr. David Kaufman, professor of pathology; Dr. Keith Burridge, assistant professor of anatomy; and Dr. Avram Gold, assistant professor of environmental sciences and engineering.

Cancer center trainees reporting on their work were: Drs. Jerry Ruth, David Toorchen, Jill Siegfried, Berch Henry II, John Sixby, Nancy Olashaw, Barbara Chou, S. Keith Chapes, John Patton, Myron Toews, Richard Rubin, Michelle Davis and research associate Dr. Alok Datta.

Dr. John Newbold, associate professor of bacteriology and immunology, organized the annual conference, sponsored by a National Research Ser-

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vice Award training program and administered by the Cancer Research Center. The training program, now entering its seventh year of funding by the National Cancer Institute, has supported the research, training 39 postdoctoral fellows in laboratories throughout the medical school.

Marlys Mitchell, associate professor and director of occupational therapy, participated in an American Occupational Therapy Association conference program advisory committee meeting June 8-10 in Philadelphia.

Dr. John A. Messenheimer, assistant professor of neurology and medicine, participated in the American EEG Society annual meeting as an associate examiner on the American Board for Qualification in EEG June 14 in Chicago.

Phillip D. Buchanan, adjunct assistant professor of pediatrics, presented a scientific paper on "Early Prenatal Ultrasound Diagnosis of Urethral Atresia in a Fetus with the VATER Association" at the 1981 March of Dimes 14th Annual Birth Defects Conference June 17 in San Diego. Buchanan also was a visiting professor at the Southwest Biomedical Research Institute. He presented a talk titled "Review of Recent Developments in Prenatal Genetic Diagnosis" June 19 in Tempe, Ariz.

Mary Ellen Jones, Kenan professor and chairwoman of biochemistry, chaired a symposium at the annual meeting of the American Society of Biological Chemists June 4 in St. Louis. She also was elected councilor of the society.

Pierre Morell, professor of biochemistry, partici-

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pated in a special scientific program organized by the Multiple Sclerosis Society and chaired two sessions at the workshop on biology of oligodendroglin June 19-21 in Airlie, Va.

Dr. Charles P. Schuch, assistant professor of medical allied health professions, participated in the Physical Therapy Education Programs directors meeting during the annual conference of the American Physical Therapy Association June 26-27 in Washington, D.C.

Dr. James Mandell, assistant professor of pediatric urology, presented two papers and a poster session and was co-author of two other papers presented at the 76th annual meeting of the American Urological Association May 10-14 in Boston. Dr. Glenn M. Preminger, surgery, presented a paper and a poster session. Other co-authors of the papers or the poster

session included: Dr. Floyd A. Fried, professor and chief of the division of urology; Dr. Robert T. Herrington, associate professor of pediatrics; William E. Koch, professor of anatomy; Dr. Campbell W. McMillan, professor of pediatrics; and Dr. Donald E. Woosely, assistant professor of surgery. Preminger also won first prize for best research paper at the residents research forum of the N.C. chapter of the American College of Surgeons annual meeting May 15 in Boone. Fried, Koch and Mandell were co-authors of the paper.

Michael G. O'Rand, assistant professor of anatomy, presented a paper at the International Conference on Reproductive Immunology May 15-18 in Alberta, Canada.

Charles R. Hackenbrock, chairman and professor of anatomy, was invited lecturer of the National

And there's more proof on the way!

1982 will see the completion of the Multiple Risk Factor Intervention Trial (MRFIT)—a six-year, 12,000-patient study assessing the factors that increase risk of cardiovascular disease. For the management of hypertension, the preferred Step-2 regimen in this study is reserpine-thiazide.

In 1978, in a preliminary report presented to the Epidemiology Section of the American Heart Association (Dallas, Nov 1978), after 12 months of the trial, fewer patients (5.3%) treated with reserpine suffered depression than even the untreated control group (7.7%)!

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11/81

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Council for Science and Technology and the Ministry of Education at the Medical Institute of Cluj, May 17-26 in Cluj, Romania.

Patricia Porter, chief of the communicative disorders section of the Division for Disorders of Development and Learning, presented a paper at the American Association on Mental Deficiency annual meeting May 25-29 in Detroit.

Dr. Joseph S. Pagano, professor of medicine and bacteriology, and director of the Cancer Research Center, participated in National Institutes of Health site visits May 26-28 at the University of Chicago Cancer Research Center and June 1-3 at the Medical College of Virginia Cancer Center in Richmond.

Dr. Harold R. Roberts, professor of medicine and pathology, chaired a symposium at the 14th Congress of the World Federation of Hemophilia July 3-7 in San Jose, Costa Rica.

Dr. Cecil Sheps, professor of community medicine and hospital administration, has been appointed to a two-year term on the membership committee of the Institute of Medicine, National Academy of Sciences.

Dr. James N. Hayward, chairman and professor of neurology, was elected president-elect of the N.C. Society for Neurosciences.

News Notes from the EAST CAROLINA UNIVERSITY SCHOOL OF MEDICINE

The School of Medicine is joining with Eastern Carolina Home Health, Inc., a private, non-profit organization that provides home-based nursing and rehabilitation care, to start a home-based hospice program in Pitt County.

The program, described by medical director Walter Pories as a "hospice without walls," began offering a variety of support to terminally ill patients in early October.

"We are recruiting a volunteer director who will train volunteers to help patients with advanced cancer and their families," said Pories. Hospice volunteers will do many tasks, include shopping, homemaking, cooking and counseling. They also will help coordinate ministerial support, maintain equipment and dressing supplies, and, when necessary, tutor patients and their children.

Pories, who is chairman of surgery at the School of Medicine, said the Pitt County hospice will differ from traditional hospices in urban areas. According to Pories, the hospice program emphasizes care in the home rather than in an institution and encourages physicians to provide continuing care to terminally ill patients. Traditionally, physicians frequently refer their patients to the hospice medical director for care.

"The physicians in Pitt County are very interested in continuing their care throughout the entire illness," said Pories. "Our hospice encourages this practice because it represents better medicine and is important to the patient and the family."

Both terminally ill patients and patients with advanced diseases will be eligible to participate in the program. Admission does not mean that no further medical therapy will be given. According to Pories, all types of treatment will be available, unlike more traditional hospice programs where only pain control is administered.

Two members of the Department of Pathology and Laboratory Medicine attended the annual meeting of the Reticuloendothelial Society in Milwaukee held October 12-16. Dr. Alvin Volkman, professor, and Dr. Paul H. Strausbauch, assistant professor, presented "Effects of ^{89}Sr Treatment on Mononuclear Phagocytes" and "Ultrastructure of Beige Mouse ($\text{C}_{57}\text{BL}/6\text{bg/bg}$) Resident Peritoneal Macrophages."

Dr. Walter J. Pories, professor and chairman of the Department of Surgery, and Dr. Allen F. Bowyer, professor of medicine, were guest speakers at the 1981 East Carolina University Phi Kappa Phi symposium entitled "Higher Education: Trends and Issues for the Eighties." Pories presented "Pre-medical Education: It Takes Years to Get Over It" and Bowyer presented "Intellectual Excellence: An Appropriate Goal for Education in the Computer Age."

Dr. David L. Beckman, professor of physiology, presented two papers he co-authored with Dr. Daniel J. Crittenden, research associate, at the meeting of the American Physiological Society in Cincinnati held October 12-16.

At the meeting, Beckman presented the papers entitled "Pulmonary Phospholipid Changes from Mechanical Head Injury" and "Blood Glucose and O_2 Toxicity."

Beckman and Crittenden also collaborated on an article entitled "Protection from Oxygen-induced Seizures by Clonazepam and Propylene Glycol." The article appears in the October issue of the *Proceedings of the Society for Experimental Biology and Medicine*.

Dr. A. Dewane Frutiger, associate director of the Developmental Evaluation Clinic, published "Con-

sortium Approach to Clinical Services" in the September issue of the *American Physical Therapy Association* journal.

R. Stephen Porter, Pharm. D., assistant professor of family medicine, presented a lecture entitled "Individualizing Drug Therapy" at the San Jose Health Center in California on October 1.

Dr. Lynn G. Borchert, assistant professor of obstetrics and gynecology, and Dr. Ross Duff, fourth-year obstetrics and gynecology resident, recently co-authored "Diagnosis and Management of Ectopic Pregnancy." Borchert presented the paper at the American College of Obstetrics and Gynecology District 4 meeting in Puerto Rico held October 20-25.

Dr. Theodore Kushnick, professor of pediatrics and director of the Developmental Evaluation Clinic, presented pediatric grand rounds at the Medical College of Virginia on October 19.

Dr. Charles E. Boklage, assistant professor of microbiology and immunology, recently attended the

annual meeting of the American Society of Human Genetics held at the University of Texas Health Science in Dallas. Boklage made a poster presentation which outlined "Twin Zygosity Differences in Developmental Relationships."

Dr. Allen F. Bowyer, professor of medicine, was a guest speaker at the annual Winston-Salem Heart Symposium held at Forsyth Memorial Hospital on October 23. Bowyer's lecture topic was "The Impact of Modern Cardiology Techniques on the Practice of Medicine."

Dr. Paul L. Fletcher Jr., associate professor of microbiology, recently attended the annual Research Park Liquid Chromatography Symposium and presented "Separations of Peptides and PTH Amino Acids." The symposium was sponsored by Burroughs Wellcome and Waters Associates.

Dr. Dennis R. Sinar, associate professor of medicine, presented "The Adverse Effects of Lidocaine on Esophageal Peristalsis" at the American Federation of Clinical Research symposium in Boston. The symposium was held October 22-23.

Drs. Lynis Dohm, Hisham A. Barakat and George

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J. Kasperek, associate professors of biochemistry, were recently granted \$54,619 from the National Institute of Arthritis, Diabetes, Digestive and Kidney Diseases, NIH. The grant will be used to study "Control of Muscle Protein Metabolism During Exercise."

Dr. Ronald S. Johnson, a molecular biologist, has been appointed assistant professor of biochemistry. Johnson recently completed a postdoctoral fellowship at the University of California at Berkeley. He received his bachelor's degree and Ph.D. from Northwestern University.

Dr. Everett C. Simmons has been appointed assistant professor of psychiatric medicine. Prior to joining the faculty at the School of Medicine, Simmons was in a private general psychiatric practice in Columbia, S.C. He also was the medical advisor for the Division of Program Integrity in the Department of Social Services in Columbia. Simmons received his bachelor of science degree from Berea College in Kentucky and his medical degree from the University of Tennessee.

Dr. John E. Wimmer Jr. has been appointed assistant professor of pediatrics and director of the

neonatal outreach program for 29 counties in Eastern North Carolina. Wimmer was previously director of the neonatal unit at the Naval Regional Medical Center in San Diego. He also served as assistant clinical professor of pediatrics at the University of California in San Diego. He received his bachelor of science degree from Randolph-Macon College and his medical degree from the Medical College of Virginia.

News Notes from the DUKE UNIVERSITY MEDICAL CENTER

Because of the increased demand for family medicine training, the Duke University School of Medicine has added a required clinical rotation in family practice. The curriculum change places family medicine on an equal basis with the other five major clinical specialties — internal medicine, pediatrics, psychiatry, surgery and obstetrics-gynecology.

Half of the eight-week clerkship is spent in the office of a practicing family physician, most of whom are scattered throughout North Carolina, primarily in small towns. The family practice clerkship also re-

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WARNING

This fixed combination drug is not indicated for initial therapy of hypertension. Hypertension requires therapy titrated to the individual patient. If the fixed combination represents the dosage so determined, its use may be more convenient in patient management. The treatment of hypertension is not static, but must be reevaluated as conditions in each patient warrant.

CONTRAINDICATIONS

Anuria, oliguria, active peptic ulceration, ulcerative colitis, severe depression or hypersensitivity to its components contraindicates the use of Salutensin.

WARNINGS

Small-bowel lesions (obstruction, hemorrhage, perforation and death) have occurred during therapy with enteric-coated formulations containing potassium, with or

without thiazides. Such potassium formulations should be used with Salutensin only when indicated and should be discontinued immediately if abdominal pain, distention, nausea, vomiting or gastrointestinal bleeding occurs. Use cautiously, and only when deemed essential, in fertile, pregnant or lactating patients.

Use in Pregnancy

Thiazides cross the placenta and can cause fetal or neonatal hyperbilirubinemia, thrombocytopenia, altered carbohydrate metabolism and possibly electrolyte disturbances. Fatal reactions may occur with reserpine during electroshock therapy; discontinue Salutensin 2 weeks before such therapy. Increased respiratory secretions, nasal congestion, cyanosis and anorexia may occur in infants born to reserpine-treated mothers.

PRECAUTIONS

Azotemia, hypochloremia, hyponatremia, hypochloremic alkalosis and hypokalemia

(especially with hepatic cirrhosis and corticosteroid therapy) may occur, particularly with pre-existing vomiting and diarrhea. Potassium loss may cause digital intoxication. *Potassium loss responds to potassium-rich foods, potassium chloride if necessary, discontinuation of therapy.* Serum ammonia elevation may precipitate coma in precomatose hepatic cirrhotics. Discontinue therapy 2 weeks before surgery or if myocardial irritability, progressive azotemia or severe depression occur. Exercise caution in patients with chronic uremia, angina pectoris, coronary thrombosis or extensive cerebral vascular disease or bronchial asthma and in those with a history of peptic ulceration or bronchial asthma; in post-sympathectomy patients; in patients on quinidine; and in patients with gallstone in whom biliary colic may occur. Patients who have diabetes mellitus or who are suspected of being prediabetic should be kept under close observation if treated with this agent.

quires medical students to spend a month in a Durham family medicine clinic.

The rotation is supported by a \$720,000 three-year grant from the Department of Health and Human Services.

Dr. Talmage L. Peele, professor emeritus of anatomy and neurology at Duke University Medical Center, died Sept. 11 of an apparent heart attack while on vacation in Pargos, Greece. He was 73.

Peele was a Duke faculty member for 42 years. He was best known for his textbook, *The Neuroanatomic Basis for Clinical Neurology*, first published in 1954. His research in how neuroanatomy affects behavior laid the groundwork for later discoveries in nervous system chemistry. Peele graduated from Duke's medical school in the class of 1934, the first full four-year class.

Dr. Robert Machemer, chairman of the Duke University Medical Center Department of Ophthalmology, was awarded the highest honor of the German Ophthalmology Society. Machemer, who is a pioneer in the development of eye surgery techniques, was awarded the Von Graefe prize in September. The prize is awarded by the society every three years.

Machemer was awarded the prize in recognition of his contributions to vitreous surgery, the ophthalmic specialty that he initiated.

Dr. Phillip Handler, James B. Duke Professor of Biochemistry, was awarded the National Medal of Science by President Ronald Reagan.

Handler served as chairman of the National Academy of Sciences from 1969 to 1981 and was chairman of the National Science Board from 1962-1970. He retired from the academy in July. Except for his 12-year extended leave to serve at the academy, Handler has been at Duke since 1939.

"This award is the highest distinction that any scientist can receive in this nation," said Dr. William G. Anlyan, vice president for health affairs. "Dr. Handler has earned this very special honor as an outstanding leader of American science for these many years. We are proud to have him as a member of the Duke family."

The Duke Poison Control Center received a toll-free number Nov. 1: 1-800-672-1697.

The Duke Center, directed by Dr. Shirley K. Osterhout, is recognized as the state poison control center by all N.C. state departments and bureaus. The

ADVERSE REACTIONS

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References:

1. Propranolol in the treatment of essential hypertension. Veterans Administration Cooperative Study Group on Antihypertensive Agents. *JAMA* 237:2303-2310, 1977.
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3. The 1980 Report of the Joint National Committee on Detection, Evaluation, and Treatment of High Blood Pressure. *Arch Intern Med* 140:1280-1285, 1980.

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center provides an easily accessible central information resource for identification of toxic substances and treatment of poisonings.

The Duke Poison Control Center was established in 1954, the second one in the nation, as part of Duke's Department of Pediatrics. Dr. Jay Arena was the founder.

Two Duke University Medical Center scientists and a professor in the Duke School of Law have been elected to the National Academy of Sciences' Institute of Medicine.

Dr. Wolfgang K. Joklik, James B. Duke Professor of microbiology and immunology, Dr. Samuel L. Katz, Wilburt C. Davison, Professor of pediatrics, and Clark Havighurst, Professor of law, were selected for membership in the society because of their significant contributions to medicine and health care.

The Institute is limited to 400 members and was chartered by the National Academy of Sciences in 1970 to provide a continuing review of the problems of medicine and health care.

Joklik is an authority in the field of virology — the branch of microbiology concerned with viruses and viral disease. His research has been concentrated on

the mechanisms by which viruses multiply and how they affect their hosts. He has served on numerous advisory and professional committees in the field of virology and molecular cell biology, has published widely and is senior editor of *Zinsser Microbiology*, the standard text in that field. Joklik has been chairman of Duke's Department of Microbiology and Immunology since 1968.

Katz is renowned for his work in infectious diseases and pediatrics. Working with Nobel Laureate, Dr. John F. Enders, he developed the measles vaccine which has been used throughout the world to reduce the frequency of that infection in infants and children. Katz has served on many committees dealing with infectious diseases and with methods for their control. He is author or co-author of several books dealing with infectious diseases, especially those of viral origin. He has been chairman of Duke's Department of Pediatrics since 1968.

Clark Havighurst is an authority on the legal issues in health care. He has been professor in Duke's law school since 1968, and he also serves as an adjunct scholar in law and health policy with the American Enterprise Institute for Public Policy Research in Washington, D.C. Since 1969, Havighurst has directed a federally funded research program on legal issues



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health care at the law school. In 1972-'73, he was scholar-in-residence at the Institute of Medicine of the National Academy of Sciences.

He has published widely, and is on the editorial boards of *American Journal of Law and Medicine* and *Journal of Health Politics, Policy and Law*. He is the author of *Deregulating the Health Industry*, scheduled for publication at the end of this year.

Thorir D. Bjornsson, assistant professor in the Departments of Pharmacology and Medicine, received a \$4,133 research grant from the National Heart, Lung and Blood Institute to study clinical pharmacology of heparin.

Vincent W. Dennis, associate professor in the Department of Medicine, received a \$43,276 National Research Service Award from the National Institute of Arthritis, Metabolism and Digestive Diseases to study kidney structure and function in health and disease.

Robert B. Jennings, professor and chairman of the Department of Pathology, received a \$122,647 research grant from the National Heart, Lung and Blood Institute. Jennings will use the grant to study myocardial ischemia.

Keith A. Reimer, associate professor in the Department of Pathology, was awarded a \$52,181 research grant from the National Heart, Lung and Blood Institute to study myocardial ischemia and reperfusion.

Dan G. Blazer, associate professor in the Department of Psychiatry, received a \$35,183 development award from the National Institute of Mental Health to study "Environmental Stress and Mental Health in the Elderly."

Paul L. Modrich, associate professor in the Department of Biochemistry, received a \$160,403 research grant from the National Institute of General Medical Sciences to study "Enzymatic Basis of Type I Restriction and Modification."

Montrose J. Moses, professor in the Department of Anatomy, received a \$47,452 research grant from the National Institute of General Medical Sciences for "Chromosome Analysis in Lemuriform Primates."

Paul M. Conn, assistant professor in the Department of Pharmacology, was awarded a \$31,644 research grant from the National Institute of Child Health and Human Development to study "Gonadotropin Releasing Hormone Actions — Role of CA²⁺ Ions."

Redford B. Williams Jr., professor of psychiatry and assistant professor of medicine, received a \$38,257 development award from the National Institute of Mental Health to study behavioral mechanisms in cardiovascular diseases.

Page A. Anderson, associate professor in the division of pediatric cardiology, received a \$78,258 research grant from the National Heart, Lung and Blood Institute for a project, "Developing Heart: Biophysical Aspects."

Robert L. Hill, professor and chairman of the Department of Biochemistry, received a \$143,212 research grant from the National Institute of General Medical Sciences to study the structure and function of proteins.

George S. Eisenbarth, assistant professor in the division of endocrinology, received a new investigator research award of \$31,601 from the National Institute of Arthritis, Metabolism and Digestive Diseases. He is studying the characterization of islet cell surface molecules.

Sharyn A. Endow, assistant professor in the Department of Microbiology and Immunology, received a research grant of \$13,700 from the March of Dimes Birth Defects Foundation.

George L. Maddox, director of the Center for the Study of Aging and Human Development, received a \$103,817 grant from the Department of Health and Human Services for a gerontology career preparation program.

D. Bernard Amos, professor of immunology and experimental surgery, was awarded a \$264,079 national research service award from the National Cancer Institute. Amos is studying tumor immunology and immunogenetics.

Brenda E. Armstrong, assistant professor in the division of pediatric cardiology, received a \$40,038 clinical investigator award from the National Heart, Lung and Blood Institute. Armstrong's area of study is clinical medicine.

News Notes from the BOWMAN GRAY SCHOOL OF MEDICINE WAKE FOREST UNIVERSITY

Dr. Wells Martin III has been appointed to the faculty of the Bowman Gray School of Medicine as assistant professor of radiology.

As a diagnostic radiologist, Martin is interested in general skeletal, orthopedic and emergency radiology. His primary research interest is in rheumatology studies.

Martin holds the B.A. degree from Dartmouth College and the M.D. degree from the Cincinnati College of Medicine. His house officer training was completed at the University of Virginia Hospital.

Prior to coming to Bowman Gray, Martin was staff radiologist at Albemarle Hospital in Elizabeth City.

Dr. John F. Hennessy, associate professor of medicine at Bowman Gray, has won a national competition sponsored by the American Diabetes Association. Winning has resulted in his receiving an award of \$8,000 from the association.

Hennessy will use the grant in research on the ef-

fects of altered red cell metabolism in long-term diabetes.

He is studying the mechanisms that prevent red cells from delivering oxygen to the body's tissues as they normally do, and the effect which the resulting oxygen debt has on diabetics over a long period. In addition he is trying to determine how those mechanisms can be altered to enable the red cells to release oxygen.

The same reluctance which once kept people from openly discussing breast cancer and breast self-examination still makes people unwilling to talk about testicular cancer and testicular self-examination.

That was part of the message brought to Bowman Gray by a cancer nurse attending a meeting at the medical school.

Judith Sandella, a nurse at the M.D. Anderson Hospital and Tumor Institute, said during the meeting it has only been in the last year that the subject of testicular cancer has received attention in the press.

Mrs. Sandella was speaking to other cancer nurses attending the annual conference of the Piedmont Oncology Association (POA). The POA consists of cancer specialists in a five-state region who work with Bowman Gray's Cancer Research Center in obtaining the latest developments in cancer treatment. The cancer nurses attended meetings as part of the POA conference.

Mrs. Sandella suggested that males ought to undergo examination of the testicles by a physician during yearly checkups. And, she said, by the age of 15, young men ought to have learned and be practicing testicular self-examination. School health programs and physical education programs are in a particularly useful position to teach both about the problem and the self-examination, she added.

When the federal government gives approval for the widespread use of a new ultrasound machine called MAVIS, and that approval may come quite soon, it will owe much to Bowman Gray's ultrasound program and to people like Dr. Chris Wood.

Wood is an English surgeon who has spent more than a year at Bowman Gray helping to prove that MAVIS lives up to the dream of its inventor.

MAVIS is an acronym for Mobile Artery and Vein Imaging System. The machine is built in England by Picker International, Ltd.

According to Wood, who now has returned to England, MAVIS uncovers atherosclerosis in such arteries as the carotids and vertebrals by uncovering the blood turbulence occurring as the result of atherosclerotic buildup on the artery wall.

Wood worked to see that MAVIS met its specifications and conducted research with others to better define the potential applications of the machine. The research uncovered information that MAVIS may help measure the effect of artery problems within the skull, problems which traditionally have been inaccessible to ultrasound. And MAVIS has been shown to have the potential for uncovering atherosclerosis in certain arteries while the disease is in its earliest stages.

Dr. George Podgorny, clinical associate professor of surgery (emergency medicine), has been elected chairman-elect of the Board of Directors of the Emergency Medicine Foundation of Dallas, Texas.

Dr. Charles H. McLesky, assistant professor of anesthesia, has been selected to serve on the editorial advisory board of the "Anesthetist Update Series" and has been elected an alternate delegate from North Carolina to the meeting of the American Society of Anesthesiologists.

AMERICAN ACADEMY OF OPHTHALMOLOGY AND OTOLARYNGOLOGIC ALLERGY

Dr. John Foust of Charlotte was chosen 2nd president-elect of the American Academy of Ophthalmology and Otolaryngologic Allergy at its meeting in September in New Orleans. Dr. George Viscomi of Clearwater, Fla., was installed as president.

SAMUEL BUTLER [1835-1902]

They regard bodily ailments as the more venial in proportion as they have been produced by causes independent of the constitution. Thus if a person ruin his health by excessive indulgence at the table or by drinking, they count it to be almost a part of the mental disease which brought it about, and so it goes for little, but they have no mercy on such illnesses as fevers or catarrhs or lung diseases, which to us appear to be beyond the control of the individual.

Erewhon, Ch. X

In Memoriam

WAN BEEN CHOI, M.D.

Dr. Kwan Been Choi died Aug. 24, 1981, at Duke hospital in Durham.

Born March 25, 1938, in Seoul, Korea, Dr. Choi graduated from the Catholic Medical College in Seoul in 1963. He received his neurological training at Ellis Hospital, Schenectady, N.Y., in 1967-68, Veterans Administration Hospital, Bronx, 1969-70, Albany Medical College Hospital, Albany, N.Y., 1970-72, and the Bowman Gray School of Medicine, 1972-73.

He practiced neurology at the Lynchburg Training School Hospital, 1973-74, and the Veterans Administration Hospital, Fayetteville, 1974-76. He began the practice of neurology at Southeastern General Hospital in Lumberton in April of 1976.

He was a Diplomate of the American Board of Neurology and a member of the Robeson County Medical Society and the American Medical Association.

He is survived by his wife, Sal Hue Choi; three sons, Richard, Toney and Inho; his mother and four sisters.

ROBESON COUNTY MEDICAL SOCIETY

HUGH ARCHIE MATTHEWS, M.D.

Dr. Hugh Archie Matthews of Cullowhee, physician and adjunct professor at Western Carolina University, died Wednesday, May 13, 1981, in a Sylva hospital following a long illness. He was 66.

Matthews was a native of Buies Creek and was the son of the late Neil Archie and Annie Jane Stewart Matthews.

He attended Buies Creek Academy, Wake Forest University, and earned his master's degree at the University of North Carolina at Chapel Hill before entering medicine. He went from Chapel Hill to Yale for two years of post-graduate work in student development before taking up medical studies at Duke University. He did his medical internship at Johns Hopkins University in Baltimore, Maryland.

He served with the U.S. Fifth Army in World War II in the Mediterranean Theater.

After the war, Matthews began a 22-year career as a

family physician in Canton. His interest in preparing paramedical workers to serve mountain counties took him to Western Carolina University in 1969.

Matthews, class of '34, was cited for his years of service to humanity in such capacities as boys' work secretary, counselor to migrant laborers, high school teacher, battalion surgeon (Army Medical Corps), family physician, and director of health services and adjunct professor of nursing and health services at Western Carolina University. He held the last-named position for 10 years prior to his retirement in 1978.

The physician-author held membership in numerous professional societies and contributed frequently to medical journals, including the NORTH CAROLINA MEDICAL JOURNAL, and health publications, and was guest lecturer at Bowman Gray School of Medicine. He published "Neil's Way," a biographical study of his boyhood home and family, and also authored "Leaves From the Notebook of An Appalachian Physician."

Matthews was former president of the State of Franklin Health Council, Inc., and executive board member of the Western North Carolina Health Systems Agency. He received the Distinguished Service Award of the North Carolina Public Health Association in 1962 and served as chairman of the North Carolina Medical Society's Committee on Rural Health and Education for six years. He was founder and first president of the North Carolina Rural Health and Safety Council.

He served on Governor's Commissions on cancer, centers for disturbed children, and N.C. Highway Safety Council. He was a member of the board of trustees of Campbell University and was former member of the General Board of the Baptist State Convention.

Surviving are his wife, Ruth Burch Matthews; a daughter, Mrs. Stephen G. Takacs of Raleigh; a son, Albert B. Matthews of Maggie Valley; three sisters, Mrs. W. C. Johnson of Waynesville, Mrs. L. C. Gregory of Angier, and Mrs. A. Z. Byrd of Raleigh; four brothers, Lee A. Matthews of Canton, P. W. Matthews of Lillington, and N. P. and O. G. Matthews of Buies Creek; and a granddaughter.



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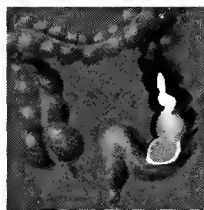
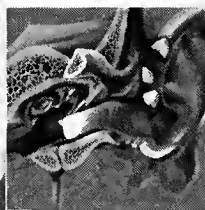
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Dosage: Not recommended for infants less than two months of age. **URINARY TRACT INFECTIONS AND SHIGELLOSIS IN ADULTS AND CHILDREN, AND ACUTE OTITIS MEDIA IN CHILDREN:**

Adults: Usual adult dosage for urinary tract infections—1 DS tablet (double strength), 2 tablets (single strength) or 4 teasp. (20 ml) b.i.d. for 10-14 days. Use identical daily dosage for 5 days for shigellosis.

Children: Recommended dosage for children with urinary tract infections or acute otitis media—8 mg/kg trimethoprim and 40 mg/kg sulfamethoxazole per 24 hours, in two divided doses for 10 days. Use identical daily dosage for 5 days for shigellosis.

For patients with renal impairment: Use recommended dosage regimen when creatinine clearance is above 30 ml/min. If creatinine clearance is between 15 and 30 ml/min, use one-half the usual regimen. Bactrim is not recommended if creatinine clearance is below 15 ml/min.

ACUTE EXACERBATIONS OF CHRONIC BRONCHITIS IN ADULTS: Usual adult dosage: 1 DS tablet (double strength), 2 tablets (single strength) or 4 teasp. (20 ml) b.i.d. for 14 days.

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Supplied: Double Strength (DS) tablets, each containing 160 mg trimethoprim and 800 mg sulfamethoxazole, bottles of 100; Tel-E-Dose[®] packages of 100; Prescription Paks of 20 and 28. Tablets, each containing 80 mg trimethoprim and 400 mg sulfamethoxazole—bottles of 100 and 500; Tel-E-Dose[®] packages of 100, Prescription Paks of 40. Pediatric Suspension, containing 40 mg trimethoprim and 200 mg sulfamethoxazole per teaspoonful (5 ml); cherry-flavored—bottles of 100 ml and 16 oz (1 pint). Suspension, containing 40 mg trimethoprim and 200 mg sulfamethoxazole per teaspoonful (5 ml), fruit-licorice flavored—bottles of 16 oz (1 pint).



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Before prescribing, please consult complete product information, a summary of which follows:

Indications and Usage: For the treatment of urinary tract infections due to susceptible strains of the following organisms: *Escherichia coli*, *Klebsiella-Enterobacter*, *Proteus mirabilis*, *Proteus vulgaris*, *Proteus morganii*. It is recommended that initial episodes of uncomplicated urinary tract infections be treated with a single effective antibacterial agent rather than the combination. **Note:** The increasing frequency of resistant organisms limits the usefulness of all antibacterials, especially in these urinary tract infections.

For acute otitis media in children due to susceptible strains of *Haemophilus influenzae* or *Streptococcus pneumoniae* when in physician's judgment it offers an advantage over other antimicrobials. Limited clinical information presently available on effectiveness of treatment of otitis media with Bactrim when infection is due to ampicillin-resistant *Haemophilus influenzae*. To date, there are limited data on the safety of repeated use of Bactrim in children under two years of age. Bactrim is not indicated for prophylactic or prolonged administration in otitis media at any age.

For acute exacerbations of chronic bronchitis in adults due to susceptible strains of *Haemophilus influenzae* or *Streptococcus pneumoniae* when in physician's judgment it offers an advantage over a single antimicrobial agent.

For enteritis due to susceptible strains of *Shigella flexneri* and *Shigella sonnei* when antibacterial therapy is indicated.

Also for the treatment of documented *Pneumocystis carinii* pneumonitis. To date, this drug has been tested only in patients 9 months to 16 years of age who were immunosuppressed by cancer therapy.

Contraindications: Hypersensitivity to trimethoprim or sulfonamides; patients with documented megaloblastic anemia due to folate deficiency; pregnancy at term; nursing mothers because sulfonamides are excreted in human milk and may cause kernicterus, infants less than 2 months of age.

Warnings: BACTRIM SHOULD NOT BE USED TO TREAT STREPTOCOCCAL PHARYNGITIS. Clinical studies show that patients with group A β -hemolytic streptococcal tonsillopharyngitis have higher incidence of bacteriologic failure when treated with Bactrim than do those treated with penicillin. Deaths from hypersensitivity reactions, agranulocytosis, aplastic anemia and other blood dyscrasias have been associated with sulfonamides. Experience with trimethoprim is much more limited but occasional interference with hematopoiesis has been reported as well as an increased incidence of thrombopenia with purpura in elderly patients on certain diuretics, primarily thiazides. Sore throat, fever, pallor, purpura or jaundice may be early signs of serious blood disorders. Frequent CBC's are recommended; therapy should be discontinued if a significantly reduced count of any formed blood element is noted.

Precautions: **General:** Use cautiously in patients with impaired renal or hepatic function, possible folate deficiency, severe allergy or bronchial asthma. In patients with glucose-6-phosphate dehydrogenase deficiency, hemolysis, frequently dose-related, may occur. During therapy, maintain adequate fluid intake and perform frequent urinalyses, with careful microscopic examination, and renal function tests, particularly where there is impaired renal function. Bactrim may prolong prothrombin time in those receiving warfarin; reassess coagulation time when administering Bactrim to these patients.

Pregnancy: Teratogenic Effects: Pregnancy Category C. Because trimethoprim and sulfamethoxazole may interfere with folic acid metabolism, use during pregnancy only if potential benefits justify the potential risk to the fetus.

Adverse Reactions: All major reactions to sulfonamides and trimethoprim are included, even if not reported with Bactrim. **Blood dyscrasias:** Agranulocytosis, aplastic anemia, megaloblastic anemia, thrombopenia, leukopenia, hemolytic anemia, purpura, hypoprothrombinemia and methemoglobinemia. **Allergic reactions:** Erythema

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1. Rubin RH, Swartz MN. *N Engl J Med* 303:426-432, Aug 21, 1980. 2. Data on file, Medical Department, Hoffmann-La Roche Inc.

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*due to susceptible strains of indicated organisms

Please see previous page for summary of product information.

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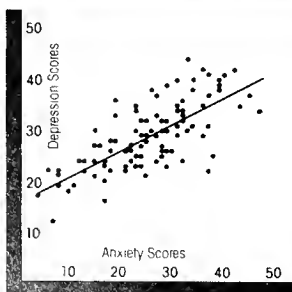
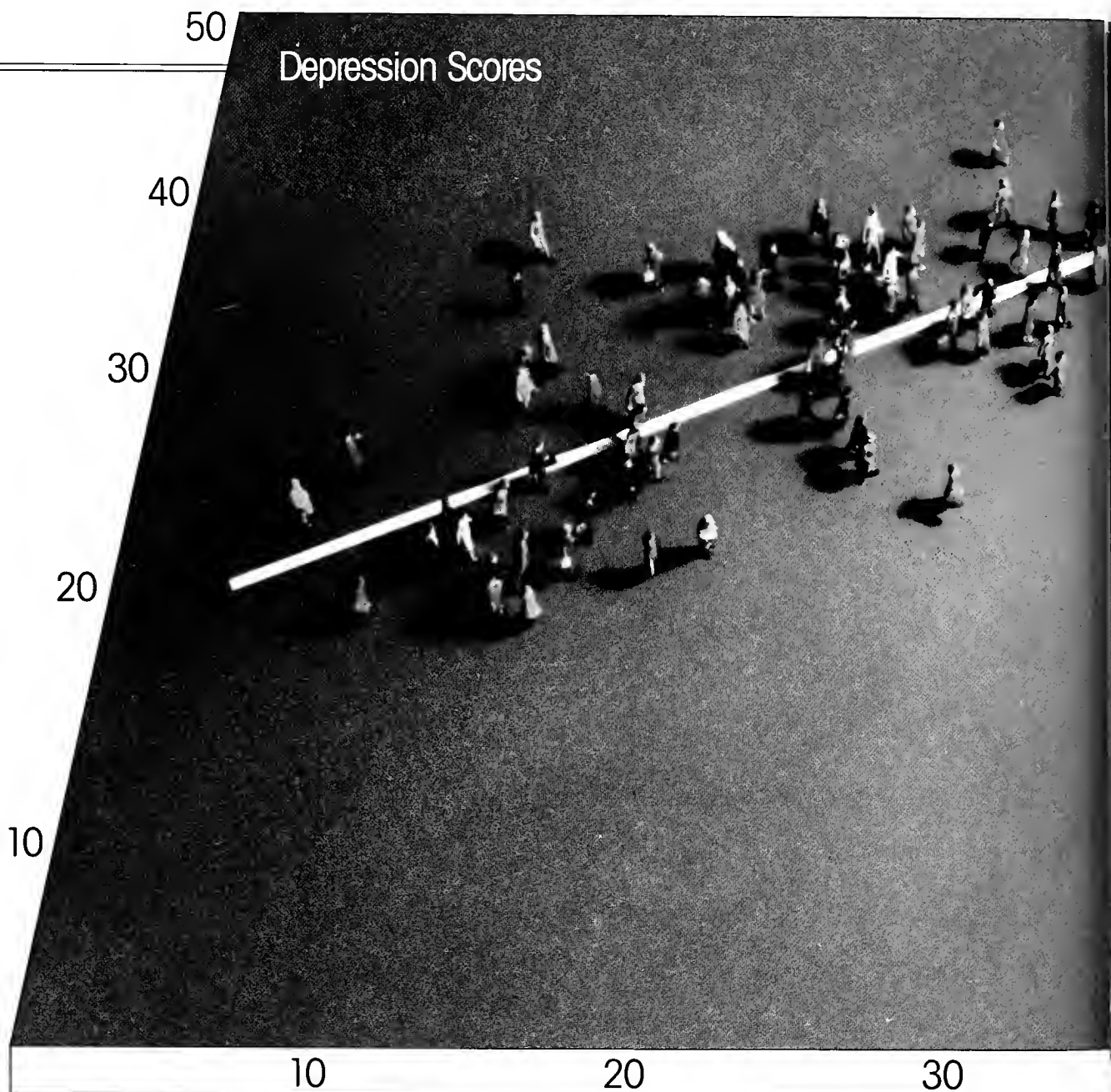
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Oct. 3, Southern Pines

FOR THE 7 OF 10 NONPSYCHOTIC



Clear correlation between anxiety and depression³

The above graph illustrates a relationship between anxiety and depression, indicating that patients seldom present with anxiety or depression alone; more often they have both in varying degrees. Data based on a sampling of 100 outpatients (64 male, 36 female) seen at a general psychiatric clinic.

³Adapted from Claghorn, J. The anxiety-depression syndrome. *Psychosomatics* 11:438-441, Sept-Oct 1970.

DEPRESSED PATIENTS WHO ARE ALSO ANXIOUS^{1,2}

Most depressed patients are also anxious. . .

Some authors estimate that 70% of all nonpsychotic patients with symptoms of depression have concomitant symptoms of anxiety.^{1,2} One author found a distinct correlation between anxiety and depression scores in 100 nonpsychotic outpatients administered the Minnesota Multiphasic Personality Inventory in a general psychiatric clinic.³ As depression scores increased, so did anxiety scores. No attempt was made to select patients other than to exclude psychotics.

but not psychotic

The logic of treating both components of anxious depression is clear. Antipsychotics, like the phenothiazines, however, carry a well-documented risk of tardive dyskinesia.⁴ Because of this, an APA Task Force recently recommended the judicious use of phenothiazines in cases other than chronic psychosis or the use of alternative treatments.

A better way to give relief

Limbitrol combines the specific anxiolytic action of Librium® (chlordiazepoxide HCl/Roche)—a benzodiazepine with a long history of safe use—with the antidepressant action of amitriptyline, a tricyclic of established clinical efficacy. In comparison to phenothiazines, Limbitrol and its components have rarely been associated with tardive dyskinesia or other extrapyramidal side effects. And in terms of rapid response and patient compliance, Limbitrol appears to be superior to amitriptyline alone. Controlled multiclinic studies showed Limbitrol relieved more symptoms more rapidly than did amitriptyline.⁵ Despite a higher incidence of drowsiness, the dropout rate due to side effects was lower with Limbitrol. (See adverse reactions section in summary of product information on next page. As with any CNS-acting agent, patients should be cautioned about driving or using dangerous machines while on therapy with Limbitrol.)

References: 1. Rickels K: Drug treatment of anxiety, in *Psychopharmacology in the Practice of Medicine*, ed. Jarvik ME. New York, Appleton-Century-Crafts, 1977, p. 316. 2. Schatzberg AF, Cole JO: Benzodiazepines in depressive disorders. *Arch Gen Psychiatry* 35:1359-1365, 1978. 3. Claghorn J: The anxiety-depression syndrome. *Psychosomatics* 11:438-441, 1970. 4. The Task Force on Late Neurological Effects of Antipsychotic Drugs: Tardive dyskinesia, summary of a task force report of the American Psychiatric Association. *Am J Psychiatry* 137:1163-1172, 1980. 5. Feighner JP *et al*: A placebo-controlled multicenter trial of Limbitrol versus its components (amitriptyline and chlordiazepoxide) in the symptomatic treatment of depressive illness. *Psychopharmacology* 61:217-225, 1979.

In moderate depression and anxiety

Limbitrol®

Tablets 5-12.5 each containing 5 mg chlordiazepoxide and 12.5 mg amitriptyline (as the hydrochloride salt)

Tablets 10-25 each containing 10 mg chlordiazepoxide and 25 mg amitriptyline (as the hydrochloride salt)

Relief without a phenothiazine

Please see summary of product information on next page.

Anxiety Scores

50

LIBITROL® TABLETS Tranquilizer—Antidepressant

Before prescribing, please consult complete product information, a summary of which follows:

Indications: Relief of moderate to severe depression associated with moderate to severe anxiety

Contraindications: Known hypersensitivity to benzodiazepines or tricyclic antidepressants. Do not use with monoamine oxidase (MAO) inhibitors or within 14 days following discontinuation of MAO inhibitors since hyperpyretic crises, severe convulsions and deaths have occurred with concomitant use. then initiate cautiously, gradually increasing dosage until optimal response is achieved. Contraindicated during acute recovery phase following myocardial infarction

Warnings: Use with great care in patients with history of urinary retention or angle-closure glaucoma. Severe constipation may occur in patients taking tricyclic antidepressants and anticholinergic-type drugs. Closely supervise cardiovascular patients. (Arrhythmias, sinus tachycardia and prolongation of conduction time reported with use of tricyclic antidepressants, especially high doses. Myocardial infarction and stroke reported with use of this class of drugs.) Caution patients about possible combined effects with alcohol and other CNS depressants and against hazardous occupations requiring complete mental alertness (e.g., operating machinery, driving).

Usage in Pregnancy: Use of minor tranquilizers during the first trimester should almost always be avoided because of increased risk of congenital malformations as suggested in several studies. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.

Since physical and psychological dependence to chlordiazepoxide have been reported rarely, use caution in administering Libitrol to addiction-prone individuals or those who might increase dosage, withdrawal symptoms following discontinuation of either component alone have been reported (nausea, headache and malaise for amitriptyline, symptoms [including convulsions] similar to those of barbiturate withdrawal for chlordiazepoxide).

Precautions: Use with caution in patients with a history of seizures, in hyperthyroid patients or those on thyroid medication, and in patients with impaired renal or hepatic function. Because of the possibility of suicide in depressed patients, do not permit easy access to large quantities in these patients. Periodic liver function tests and blood counts are recommended during prolonged treatment. Amitriptyline component may block action of guanethidine or similar antihypertensives. Concomitant use with other psychotropic drugs has not been evaluated. Sedative effects may be additive. Discontinue several days before surgery. Limit concomitant administration of ECT to essential treatment. See Warnings for precautions about pregnancy. Libitrol should not be taken during the nursing period. Not recommended in children under 12.

In the elderly and debilitated, limit to smallest effective dosage to preclude ataxia, oversedation, confusion or anticholinergic effects.

Adverse Reactions: Most frequently reported are those associated with either component alone: drowsiness, dry mouth, constipation, blurred vision, dizziness and bloating. Less frequently occurring reactions include vivid dreams, impotence, tremor, confusion and nasal congestion. Many depressive symptoms including anorexia, fatigue, weakness, restlessness and lethargy have been reported as side effects of both Libitrol and amitriptyline. Granulocytopenia, jaundice and hepatic dysfunction have been observed rarely.

The following list includes adverse reactions not reported with Libitrol but requiring consideration because they have been reported with one or both components or closely related drugs.

Cardiovascular: Hypotension, hypertension, tachycardia, palpitations, myocardial infarction, arrhythmias, heart block, stroke.

Psychiatric: Euphoria, apprehension, poor concentration, delusions, hallucinations, hypomania and increased or decreased libido.

Neurologic: Incoordination, ataxia, numbness, tingling and paresthesias of the extremities, extrapyramidal symptoms, syncope, changes in EEG patterns.

Anticholinergic: Disturbance of accommodation, paralytic ileus, urinary retention, dilatation of urinary tract.

Allergic: Skin rash, urticaria, photosensitization, edema of face and tongue, pruritus.

Hematologic: Bone marrow depression including agranulocytosis, eosinophilia, purpura, thrombocytopenia.

Gastrointestinal: Nausea, epigastric distress, vomiting, anorexia, stomatitis, peculiar taste, diarrhea, black tongue.

Endocrine: Testicular swelling and gynecomastia in the male, breast enlargement, galactorrhea and minor menstrual irregularities in the female and elevation and lowering of blood sugar levels.

Other: Headache, weight gain or loss, increased perspiration, urinary frequency, mydriasis, jaundice, alopecia, parotid swelling.

Overdosage: Immediately hospitalize patient suspected of having taken an overdose. Treatment is symptomatic and supportive. I.V. administration of 1 to 3 mg physostigmine salicylate has been reported to reverse the symptoms of amitriptyline poisoning. See complete product information for manifestation and treatment.

Dosage: Individualize according to symptom severity and patient response. Reduce to smallest effective dosage when satisfactory response is obtained. Larger portion of daily dose may be taken at bedtime. Single h.s. dose may suffice for some patients. Lower dosages are recommended for the elderly. Libitrol 10-25, initial dosage of three to four tablets daily in divided doses, increased to six tablets or decreased to two tablets daily as required. Libitrol 5-12.5, initial dosage of three to four tablets daily in divided doses, for patients who do not tolerate higher doses.

How Supplied: White, film-coated tablets, each containing 10 mg chlordiazepoxide and 25 mg amitriptyline (as the hydrochloride salt) and blue, film-coated tablets, each containing 5 mg chlordiazepoxide and 12.5 mg amitriptyline (as the hydrochloride salt)—baffles of 100 and 500, Tel-E-Dose® packages of 100, available in trays of 4 reverse-numbered boxes of 25, and in boxes containing 10 strips of 10. Prescription Packs of 50.

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AHEAD

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May 6-9, 1982
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Pinehurst, N.C.

SPORTS MEDICINE SYMPOSIUM
July 2-4, 1982
Blockade Runner
Wrightsville Beach, N.C.

COMMITTEE CONCLAVE
September 29-October 3, 1982
Mid Pines Club
Southern Pines, N.C.



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For complete information, consult Official Package Circular.

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INDICATIONS:

Although the principal indication for cloxacillin sodium is in the treatment of infections due to penicillinase-producing staphylococci, it may be used to initiate therapy in such patients in whom a staphylococcal infection is suspected. (See Important Note below.)

Bacteriologic studies to determine the causative organisms and their sensitivity to cloxacillin sodium should be performed.

IMPORTANT NOTE

When it is judged necessary that treatment be initiated before definitive culture and sensitivity results are known, the choice of cloxacillin sodium should take into consideration the fact that it has been shown to be effective only in the treatment of infections caused by pneumococci, Group A beta-hemolytic streptococci, and penicillin G-resistant and penicillin G-sensitive staphylococci. If the bacteriology report later indicates the infection is due to an organism other than a penicillin G-resistant staphylococcus sensitive to cloxacillin sodium, the physician is advised to continue therapy with a drug other than cloxacillin sodium or any other penicillinase-resistant semi-synthetic penicillin.

Recent studies have reported that the percentage of staphylococcal isolates resistant to penicillin G outside the hospital is increasing, approximating the high percentage of resistant staphylococcal isolates found in the hospital. For this reason, it is recommended that a penicillinase-resistant penicillin be used as initial therapy for any suspected staphylococcal infection until culture and sensitivity results are known.

Cloxacillin sodium is a compound that acts through a mechanism similar to that of methicillin against penicillin G-resistant staphylococci. Strains of staphylococci resistant to methicillin have existed in nature and it is known that the number of these strains reported has been increasing. Such strains of staphylococci have been capable of producing serious disease, in some instances resulting in fatality. Because of this, there is concern that widespread use of the penicillinase-resistant penicillins may result in the appearance of an increasing number of staphylococcal strains which are resistant to these penicillins.

Methicillin-resistant strains are almost always resistant to all other penicillinase-resistant penicillins (cross-resistance with cephalosporin derivatives also occurs frequently). Resistance to any penicillinase-resistant penicillin should be interpreted as evidence of clinical resistance to all, in spite of the fact that minor variations in *in vitro* sensitivity may be encountered when more than one penicillinase-resistant penicillin is tested against the same strain of staphylococcus.

CONTRAINDICATIONS:

A history of a previous hypersensitivity reaction to any of the penicillins is a contraindication.

RESULTS OF ORAL THERAPY revealed a high percentage of treatment failures with penicillin V potassium, but *no* failures with Tegopen.

		Given Tegopen® (cloxacillin sodium)	Given penicillin V-K
<i>Staphylococcus aureus</i>	(78 patients)	39	39
Returned to clinic at one week		29†	38†
Treatment failure at one week		0	18 (47.4%)
<i>Staphylococcus aureus</i> and <i>Streptococcus pyogenes</i>	(9 patients)	4	5
Returned to clinic at one week		4	5
Treatment failure at one week		0	2 (40%)
No initial bacterial growth	(14 patients)	9	5
All 14 healed, regardless of which antibiotic was administered.			
Beta-hemolytic <i>Streptococcus</i>	(1 patient)	0	1
TOTALS:	102 patients	52 patients	50 patients

†Eleven patients did not return for their one-week checkup. These were all called by telephone, and their families reported

the lesions had healed. One patient was dropped from the study, early, because of adverse reaction to medication.

STUDY: DESCRIPTION/PROTOCOL

- 102 nonselected subjects, with initial bacteriology as follows: 77% *Staphylococcus aureus*, 9% mixed *Staphylococcus aureus* and *Streptococcus pyogenes*, and 1% beta-hemolytic *Streptococcus*.†
- All patients were given randomized therapy—Tegopen capsules or oral solution, or penicillin V-K tablets or oral solution, in recommended dosages according to body weight.

- All patients were evaluated after one week's therapy. If there was no improvement, therapy was switched to the other antibiotic. The "other antibiotic" proved to be Tegopen 100% of the time because no treatment failures had occurred with Tegopen.
- A final assessment of progress was made two weeks after initiation of Tegopen therapy.

†The remainder, to equal 100%, consisted of 14 patients (13%) who exhibited no initial bacterial growth. These 14 were all healed, whether given Tegopen or penicillin V-K.

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of the skin and skin structures**

WARNING:

Serious and occasionally fatal hypersensitivity (anaphylactoid) reactions have been reported in patients on penicillin therapy. Although anaphylaxis is more frequent following parenteral therapy it has occurred in patients on oral penicillins. These reactions are more apt to occur in individuals with a history of sensitivity to multiple allergens.

There have been well documented reports of individuals with a history of penicillin hypersensitivity reactions who have experienced severe hypersensitivity reactions when treated with a cephalosporin. Before therapy with a penicillin, careful inquiry should be made concerning previous hypersensitivity reactions to penicillins, cephalosporins, and other allergens. If an allergic reaction occurs, the drug should be discontinued and the patient treated with the usual agents, e.g., pressor amines, antihistamines, and corticosteroids.

Safety for use in pregnancy has not been established.

PRECAUTIONS:

The possibility of the occurrence of superinfections with mycotic organisms or other pathogens should be kept in mind when using this compound, as with other antibiotics. If superinfection occurs during therapy, appropriate measures should be taken.

As with any potent drug, periodic assessment of organ system function, including renal, hepatic, and hematopoietic, should be made during long-term therapy.

ADVERSE REACTIONS:

Gastrointestinal disturbances, such as nausea, epigastric discomfort, flatulence, and loose

stools, have been noted by some patients. Mildly elevated SGOT levels (less than 100 units) have been reported in a few patients for whom pretherapeutic determinations were not made. Skin rashes and allergic symptoms, including wheezing and sneezing, have occasionally been encountered. Eosinophilia, with or without overt allergic manifestations, has been noted in some patients during therapy.

USUAL DOSAGE:

Adults: 250 mg q.6h.

Children: 50 mg./Kg./day in equally divided doses q.6h. Children weighing more than 20 Kg should be given the adult dose. Administer on empty stomach for maximum absorption.

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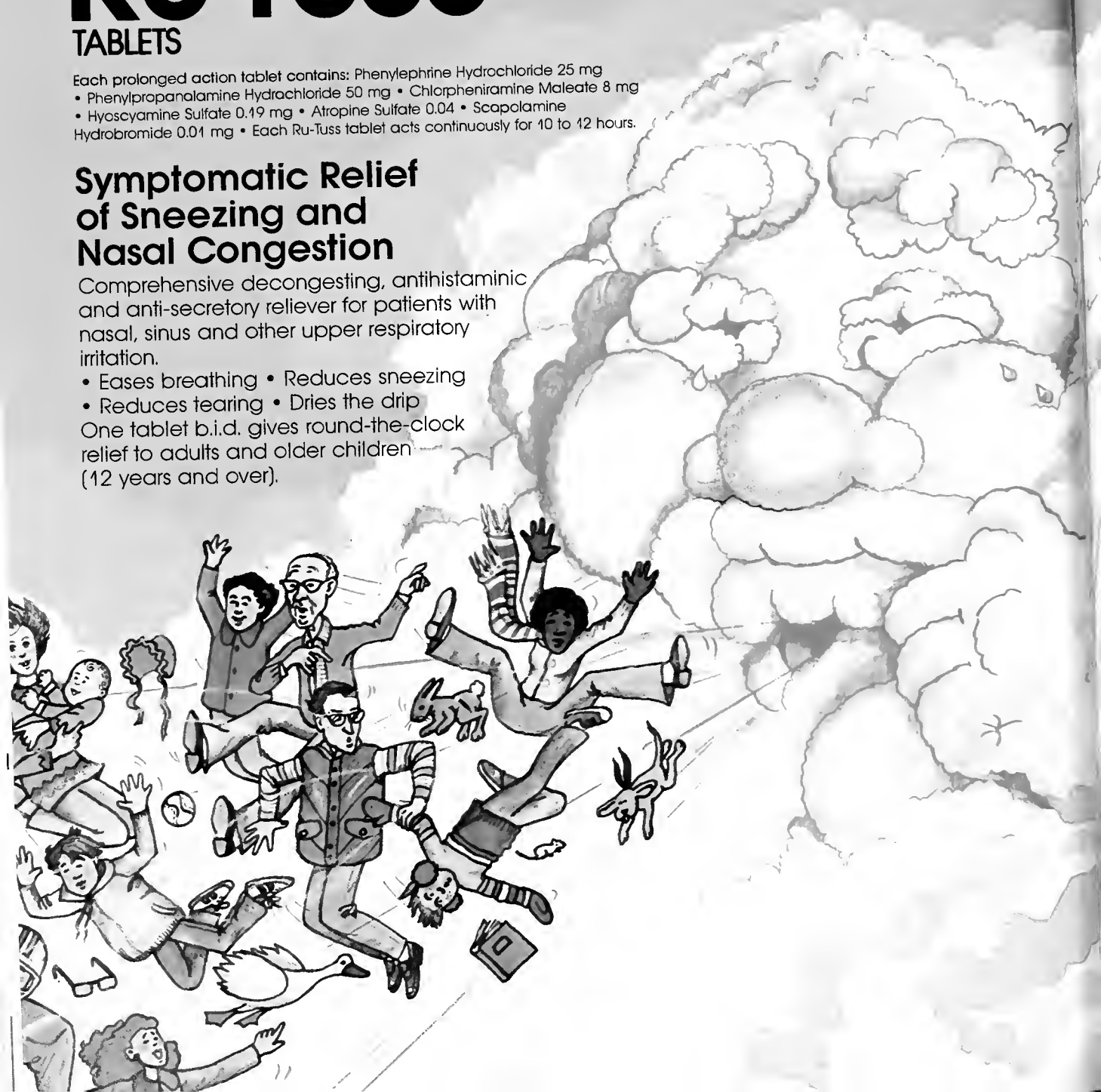
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- Eases breathing • Reduces sneezing
- Reduces tearing • Dries the drip

One tablet b.i.d. gives round-the-clock relief to adults and older children (12 years and over).



RELIEVERS

Winter Respiratory Discomfort

RU-TUSS[®]

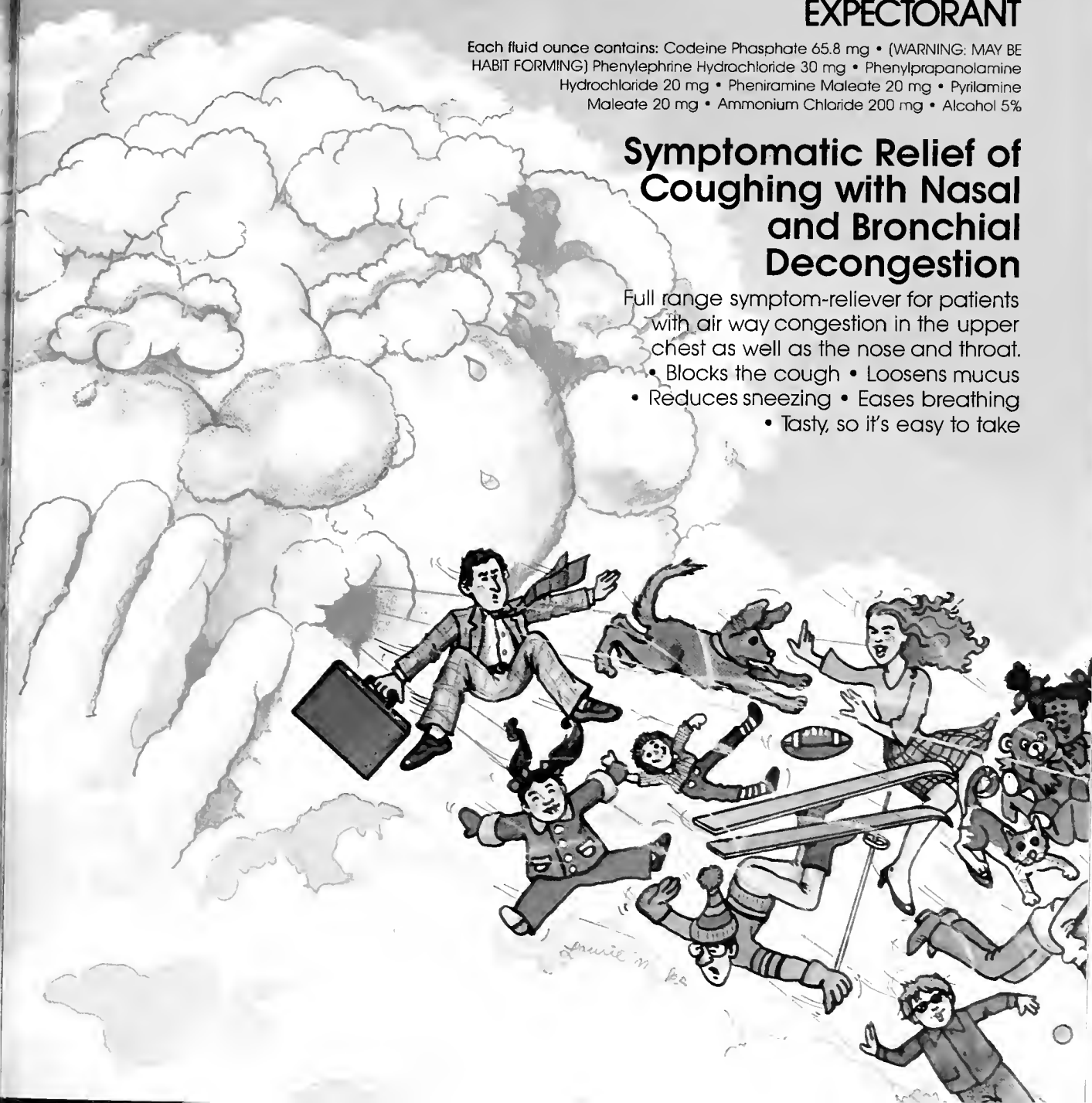
EXPECTORANT

Each fluid ounce contains: Codeine Phosphate 65.8 mg • (WARNING: MAY BE HABIT FORMING) Phenylephrine Hydrochloride 30 mg • Phenylpropanolamine Hydrochloride 20 mg • Pheniramine Maleate 20 mg • Pyrilamine Maleate 20 mg • Ammonium Chloride 200 mg • Alcohol 5%

Symptomatic Relief of Coughing with Nasal and Bronchial Decongestion

Full range symptom-reliever for patients with air way congestion in the upper chest as well as the nose and throat.

- Blocks the cough • Loosens mucus
- Reduces sneezing • Eases breathing
- Tasty, so it's easy to take



To Relieve the Symptoms of Winter Weather Upper Respiratory Distress

RU-TUSS[®] / RU-TUSS[®] TABLETS EXPECTORANT

RU-TUSS[®] Tablets

DESCRIPTION

Each prolonged action tablet contains:

Phenylephrine Hydrochloride	25 mg
Phenylpropanolamine Hydrochloride	50 mg
Chlorpheniramine Maleate	8 mg
Hyoscyamine Sulfate	0.19 mg
Atropine Sulfate	0.04 mg
Scopolamine Hydrobromide	0.01 mg

Ru-Tuss Tablets act continuously for 10 to 12 hours

Ru-Tuss Tablets are an oral antihistaminic, nasal decongestant and anti-secretory preparation

INDICATIONS AND USAGE Ru-Tuss Tablets provide relief of the symptoms resulting from irritation of sinus, nasal and upper respiratory tract tissues. Phenylephrine and phenylpropanolamine combine to exert a vasoconstrictive and decongestive action while chlorpheniramine maleate decreases the symptoms of watering eyes, post nasal drip and sneezing which may be associated with an allergic-like response. The belladonna alkaloids, hyoscyamine, atropine and scopolamine further augment the anti-secretory activity of Ru-Tuss Tablets

CONTRAINDICATIONS Hypersensitivity to antihistamines or sympathomimetics. Ru-Tuss Tablets are contraindicated in children under 12 years of age and in patients with glaucoma, bronchial asthma and women who are pregnant. Concomitant use of MAO inhibitors is contraindicated.

WARNINGS Ru-Tuss Tablets may cause drowsiness. Patients should be warned of the possible additive effects caused by taking antihistamines with alcohol, hypnotics, sedatives or tranquilizers.

PRECAUTIONS Ru-Tuss Tablets contain belladonna alkaloids, and must be administered with care to those patients with glaucoma, or urinary bladder neck obstruction. Caution should be exercised when Ru-Tuss Tablets are given to patients with hypertension, cardiac or peripheral vascular disease or hyperthyroidism. Patients should avoid driving a motor vehicle or operating dangerous machinery (See Warnings).

OVERDOSAGE Since the action of sustained release products may continue for as long as 12 hours, treatment of overdoses directed at reversing the effects of the drug and supporting the patient should be maintained for at least that length of time. Saline cathartics are useful for hastening evacuation of unreleased medication. In children and infants, antihistamine overdoses may produce convulsions and death.

ADVERSE REACTIONS Hypersensitivity reactions such as rash, urticaria, leukopenia, agranulocytosis, and thrombocytopenia may occur. Other adverse reactions to Ru-Tuss Tablets may be drowsiness, lassitude, giddiness, dryness of the mucous membranes, tightness of the chest, thickening of bronchial secretions, urinary frequency and dysuria, palpitation, tachycardia, hypotension, hypertension, faintness, dizziness, tinnitus, headache, incoordination, visual disturbances, mydriasis, xerostomia, blurred vision, anorexia, nausea, vomiting, diarrhea, constipation, epigastric distress, hyperirritability, nervousness, dizziness and insomnia. Large overdoses may cause tachypnea, delirium, fever, stupor, coma and respiratory failure.

DOSAGE AND ADMINISTRATION Adults and children over 12 years of age, one tablet morning and evening. Not recommended for children under 12 years of age. Tablets are to be swallowed whole.

HOW SUPPLIED

Bottles of 100 Tablets
Bottles of 500 Tablets

Federal law prohibits dispensing without prescription.

NDC 0524-0058-01
NDC 0524-0058-05

DISTRIBUTED BY:

Boots Pharmaceuticals, Inc.
Shreveport, Louisiana 71106

MANUFACTURED BY:

Vitarine Company, Inc.
Springfield Gardens, New York 11413

RU-TUSS[®] Expectorant

DESCRIPTION

Each fluid ounce of Ru-Tuss Expectorant contains

Codeine Phosphate

(WARNING: MAY BE HABIT FORMING)

Phenylephrine Hydrochloride
Phenylpropanolamine Hydrochloride
Pheniramine Maleate
Pyrilamine Maleate
Ammonium Chloride
Alcohol

Ru-Tuss Expectorant is an oral antitussive, antihistaminic, nasal decongestant and expectorant preparation.

INDICATIONS AND USAGE Ru-Tuss Expectorant is indicated for symptomatic relief of respiratory congestion associated with pharyngitis, tracheitis, bronchitis, and allergies. Also, for the temporary relief of symptoms associated with hay fever, allergic congestion and cough due to the common cold.

CONTRAINDICATIONS Hypersensitivity to antihistamines. Concomitant use of hypertensive or antidepressant drug containing a monoamine oxidase inhibitor is contraindicated.

Ru-Tuss Expectorant is contraindicated in patients with glaucoma, bronchial asthma in women who are pregnant.

WARNINGS Ru-Tuss Expectorant contains codeine phosphate, therefore, the patient be warned of the potential that this drug may be habit forming. Ru-Tuss Expectorant cause drowsiness. Patients should be warned of the possible additive effect of taking antihistamines with alcohol, hypnotics, sedatives and tranquilizers.

PRECAUTIONS Patients taking Ru-Tuss Expectorant should avoid driving a motor vehicle or operating dangerous machinery (See Warnings). Caution should be taken with having hypertension, diabetes, hyperthyroidism and cardiovascular disease. Caution should also be used in patients with pulmonary, hepatic or renal insufficiency.

ADVERSE REACTIONS Ru-Tuss Expectorant may cause drowsiness, lassitude, giddiness of mucous membranes, tightness of the chest, thickening of bronchial secretions, urinary frequency and dysuria, palpitation, tachycardia, hypotension/hypertension, dizziness, tinnitus, headache, incoordination, visual disturbances, mydriasis, stomia, blurred vision, anorexia, nausea, vomiting, diarrhea, constipation, epigastric distress, hyperirritability, nervousness, and insomnia. Overdoses may cause restlessness, excitation, delirium, tremors, euphoria, metabolic acidosis, stupor, tachycardia or convulsions.

DOSAGE AND ADMINISTRATION Adults: 1 or 2 teaspoonfuls, orally, every 4 hours, not to exceed 10 teaspoonfuls in any 24-hour period.

Children 6 to 12 years of age: $\frac{1}{2}$ the adult dose, not to exceed 6 teaspoonfuls in any 24-hour period. Children 2 to 6 years of age: $\frac{1}{2}$ teaspoonful every 4 hours, not to exceed 3 teaspoonfuls in any 24-hour period. Children under 2 years of age: directed by a physician.

HOW SUPPLIED: (16 fl. oz.)

Pint Bottles

Federal law prohibits dispensing without prescription.

NDC 0524-0058-01



Boots Pharmaceuticals, Inc.
Shreveport, Louisiana 71106
Pioneers in medicine for the family



PHYSICIAN OWNED in the PHYSICIAN'S INTEREST

North Carolina's LARGEST insuror of physicians' and surgeons' professional liability in the private practice market offering our insured:

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- participation in the company through a Board of Directors elected entirely by policyholders and guaranty carital holders
- many others advantages

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of North Carolina**

and MEDICAL INSURANCE AGENCY

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Phones: Raleigh 828-9334 or Statewide 1-800-662-7917

When you want to give your diet patients more...



Prescribe Less.

Most patients on low calorie diets miss the luxury of biting into a full slice of good-tasting bread. Diet breads are usually thin sliced to give the illusion of fewer calories and toast up to nothing.

But now there's Less Bread—the great tasting high fiber bread containing only 40 calories per slice. Ounce-for-ounce, pound-for-pound, Less Bread has 33-1/3% less calories and 30% less assimilable carbohydrates than ordinary dark or white breads.

This comparison of the U.S.D.A. data on white bread, whole wheat bread and Less Bread will give you a picture of the dietary benefits of Less:

	White Bread	Whole Wheat Bread	Less Bread
Calories/100 gm.	275	243	180
Crude Fiber %	.2	1.6	5.3
Protein %	9.0	10.5	10.1
Fat %	3.2	3.0	2.5

Equally important, the fiber content of Less is 400% greater than whole wheat bread. Two slices are about equal to a one-ounce-serving of whole bran cereal.

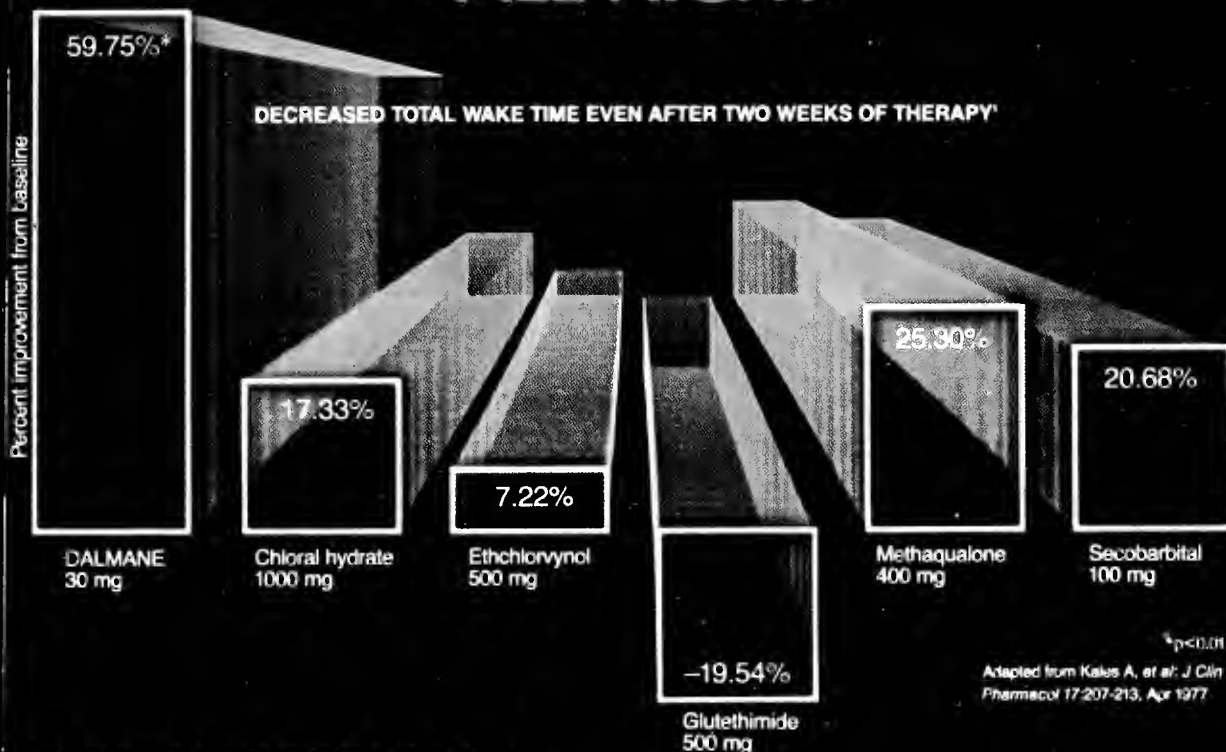
Less Bread is the sensible way for your diet patients to cut back on calories. And they'll enjoy their diets and feel more satisfied after their meals, too. Because, any way you slice it, they get more with Less.

Less BREAD

Percent improvement from baseline

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EFFECTIVE ALL NIGHT



WITH AN UNSURPASSED RECORD OF EFFICACY AND SAFETY

The efficacy of Dalmane (flurazepam HCl/Roche) has been documented in 185 studies involving 9141 patients suffering from one or more of the three major forms of insomnia—difficulty falling asleep, staying asleep and sleeping long enough.²

Relative safety was demonstrated in a large study of 2542 hospitalized medical patients. Only 3.1% of these patients reported adverse reactions—predominantly unwanted residual drowsiness. None of the reactions were considered serious by attending physicians.³

FOR SLEEP WITHIN 17 MINUTES² AND NO WORSENING OF SLEEP ON DISCONTINUATION

Rapid sleep induction, within 17 minutes on average, sets the stage for insomnia relief. And, after discontinuation of Dalmane for periods ranging up to 14 nights, no worsening of sleep compared with baseline was observed.⁴

Should insomnia recur, the patient may require guidance in setting up a regular sleep program to help

provide the optimum environment for the onset of natural sleep. If hypnotic therapy is required, it should be given for the shortest time at the lowest effective dose to achieve the desired goal.

Consider other medications the patient may be taking (including alcoholic beverages) and be aware of possible drug interactions. Please note that patients should be treated for underlying physical or psychological factors before therapy with a sleep medication is undertaken.

DALMANE[®] ^{IV}
flurazepam HCl/Roche
**THE STANDARD OF HYPNOTIC EFFICACY
FROM THE LEADER IN SLEEP RESEARCH**



Please see reverse side for a summary of product information.



SLEEP-SPECIFIC **DALMANE**[®] flurazepam HCl/Roche

One 15-mg capsule h.s.—recommended initial dosage for elderly or debilitated patients.

One 30-mg capsule h.s.—usual adult dosage (15 mg may suffice in some patients)

THE STANDARD FOR HYPNOTIC EFFICACY WITH IMPORTANT ADDED BENEFITS

- Well tolerated²
- No chemical interference with many commonly ordered laboratory tests, including triglycerides, uric acid, glucose, SGOT, alkaline phosphatase and total protein^{5,6} (See adverse reactions section of complete product information.)
- Compatible with chronic warfarin therapy; no unacceptable fluctuation in prothrombin time reported^{7,8}

UNLIKE NONSPECIFIC MEDICATIONS USED FOR SLEEP

Tricyclic antidepressants

- which are *not* sleep specific,⁹ yet are sometimes used in nondepressed patients for sleep
- which can cause transient insomnia in the elderly¹⁰
- which can require careful monitoring in cardiovascular patients¹⁰
- which have strong anticholinergic effects¹¹

Antihistamines

- which are *not* reliable sleep-inducing agents¹¹
- which may produce stimulation instead¹¹
- which have anticholinergic effects¹¹

Major tranquilizers

- whose side effects may be troublesome for nonpsychotic patients¹²
- where tolerance for sedation appears rapidly¹²

Dalmane does not cause significant worsening of sleep beyond baseline levels upon discontinuation.⁴

References: 1. Kales A, et al. *J Clin Pharmacol* 17:207-213, Apr 1977. 2. Data on file, Medical Department, Hoffmann-La Roche Inc., Nutley NJ. 3. Greenblatt DJ, Allen MD, Shader RI. *Clin Pharmacol Ther* 21:355-361, Mar 1977. 4. Kales A, et al. *Clin Pharmacol Ther* 18:356-363, Sep 1975. 5. Moore JD, Weissman L. *J Clin Pharmacol* 16:241-244, May-Jun 1976. 6. Spiegel HE. Data on file, Medical Department, Hoffmann-La Roche Inc., Nutley NJ. 7. Robinson DS, Amidon EL. Interaction of benzodiazepines with warfarin in man, in *The Benzodiazepines*, edited by Garattini S, Mussini E, Randall LO. New York: Raven Press, 1973, pp 641-646. 8. Warfarin Study. Data on file, Medical Department, Hoffmann-La Roche Inc., Nutley NJ. 9. Baldessarini RJ. Drugs and the treatment of psychiatric disorders, chap 19, in Goodman and Gilman's *The Pharmacological Basis of Therapeutics*, ed 6. New York: Macmillan Publishing Co. Inc., 1980, pp 391-447. 10. Cole JO, Davis JM. Antidepressant drugs, chap 31.2, in *Comprehensive Textbook of Psychiatry II*, edited by Freedman AM, Kaplan HI, Sadock BJ, ed 2. Baltimore: The Williams & Wilkins Company, vol 2, 1976, pp 1941-1956. 11. Douglas WW. Histamine and 5-hydroxytryptamine (serotonin) and their antagonists, chap 26, in Goodman and Gilman's *The Pharmacological Basis of Therapeutics*, ed 6. New York: Macmillan Publishing Co. Inc., 1980, pp 609-646. 12. Davis JM, Cole JO. Antipsychotic drugs, chap 31.1, in *Comprehensive Textbook of Psychiatry II*, edited by Freedman AM, Kaplan HI, Sadock BJ, ed 2. Baltimore: The Williams & Wilkins Company, vol 2, 1976, pp 1921-1940.

Before prescribing, please consult complete product information, a summary of which follows:

Indications: Effective in all types of insomnia characterized by difficulty in falling asleep, frequent nocturnal awakenings and/or early morning awakening; in patients with recurring insomnia or poor sleeping habits; in acute or chronic medical situations requiring restful sleep. Objective sleep laboratory data have shown effectiveness for at least 28 consecutive nights of administration. Since insomnia is often transient and intermittent, prolonged administration is generally not necessary or recommended. Repeated therapy should only be undertaken with appropriate patient evaluation.

Contraindications: Known hypersensitivity to flurazepam HCl; pregnancy. Benzodiazepines may cause fetal damage when administered during pregnancy. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.

Warnings: Caution patients about possible combined effects with alcohol and other CNS depressants. An additive effect may occur if alcohol is consumed the day following use for nighttime sedation. This potential may exist for several days following discontinuation. Caution against hazardous occupations requiring complete mental alertness (e.g., operating machinery, driving). Potential impairment of performance of such activities may occur the day following ingestion. Not recommended for use in persons under 15 years of age. Though physical and psychological dependence have not been reported on recommended doses, abrupt discontinuation should be avoided with gradual tapering of dosage for those patients on medication for a prolonged period of time. Use caution in administering to addiction-prone individuals or those who might increase dosage.

Precautions: In elderly and debilitated patients, it is recommended that the dosage be limited to 15 mg to reduce risk of oversedation, dizziness, confusion and/or ataxia. Consider potential additive effects with other hypnotics or CNS depressants. Employ usual precautions in severely depressed patients, or in those with latent depression or suicidal tendencies, or in those with impaired renal or hepatic function.

Adverse Reactions: Dizziness, drowsiness, lightheadedness, staggering, ataxia and falling have occurred, particularly in elderly or debilitated patients. Severe sedation, lethargy, disorientation and coma, probably indicative of drug intolerance or overdosage, have been reported. Also reported: headache, heartburn, upset stomach, nausea, vomiting, diarrhea, constipation, GI pain, nervousness, talkativeness, apprehension, irritability, weakness, palpitations, chest pains, body and joint pains and GU complaints. There have also been occurrences of leukopenia, granulocytopenia, sweating, flushes, difficulty in focusing, blurred vision, burning eyes, faintness, hypotension, shortness of breath, pruritus, skin rash, dry mouth, bitter taste, excessive salivation, anorexia, euphoria, depression, slurred speech, confusion, restlessness, hallucinations and elevated SGOT, SGPT, total and direct bilirubins, and alkaline phosphatase and paradoxical reactions, e.g., excitement, stimulation and hyperactivity.

Dosage: Individualize for maximum beneficial effect.

Adults: 30 mg usual dosage; 15 mg may suffice in some patients. **Elderly or debilitated patients:** 15 mg recommended initially until response is determined.

Supplied: Capsules containing 15 mg or 30 mg flurazepam HCl.



ROCHE PRODUCTS INC.
Manati, Puerto Rico 00701



PRESIDENT'S NEWSLETTER

NORTH CAROLINA MEDICAL SOCIETY

O. 9

FEBRUARY 1982

Dear Colleagues:

I guess I was just born to hard luck and trouble! The Headquarters Staff has given me a deadline of January 29 for the NEWSLETTER---one week before the Executive Council meets. Now, if it were one week after---I could tell you what occurred. Well, let me tell you about some things which, I know, will be discussed.

As you know, the North Carolina General Assembly, in its wisdom, legislated a statewide fee schedule for its Medicaid Program. The Appropriations Act also mandated that the Department of Human Resources consult with "the providers of such services and their respective professional associations". In response to Dr. Sarah Morrow's request for such consultation, I appointed an ad hoc Committee to Consider a Statewide Medicaid Reimbursement Fee Schedule for Physicians, composed of the elected Chairman of each Specialty Section.

I am overwhelmed by the interest, eagerness and conviction of this ad hoc Committee. Each of their two meetings were attended by sixteen (16) or more of the twenty (20) sections. The first four-hour meeting kept them from the Duke/Carolina football game and the second occurred on that icy "Snow Saturday". All came well prepared, eager to work and harmonious. The result of their work has generated four reports to be presented to the Executive Council, as follows:

REPORT A: General Comments Concerning Physician Participation in the Medicaid Program

(Excerpted from a report of a 1980 AMA survey of State Medical Societies soliciting proposals to contain costs in the Medicaid Program)

REPORT B: Proposal for a Statewide Fee Schedule

1. Support of a statewide fee schedule based on the higher of the prevailing rates between the urban and rural areas
2. Elimination of the 50th percentile in deference to the 75th percentile
3. Continuation of changes in profiles, calculated on an annual basis, based on experience generated within the previous year

REPORT C: Possible Alternatives in Current North Medicaid Program

1. In response to the Legislative mandate that the Department of Human Resources formulate plans "to purchase health care services on a prepaid basis"
2. A re-write of the Michigan State Medical Society's "Physician Primary Sponsor Plan" (a "gate-keeper" concept)

REPORT D: Outline of Potential Cost Containment Approaches in the Medicaid Program

1. Cut administrative costs
2. Emphasize least expensive appropriate care
3. Reduce utilization of services
4. Build incentive into the program

5. Recovery from liability third parties
(absent parents, private insurers, etc.)
6. Participation in the voluntary effort
(Information to recipients on proper utilization of health care services)
7. Experimental models
(Pilot projects involving increased physician reimbursement, private insurers, etc.)
8. Elimination of fraud and abuse

As you see, the ad hoc Committee worked long and hard to accomplish its extremely difficult task. It has demonstrated that the Specialty Sections want to be involved in such major efforts which will have great effect on every practicing physician in North Carolina. The Committee has expressed its hope that the North Carolina Medical Society will make positive recommendations for the North Carolina Medicaid Program in its report to the Department of Human Resources, due on February 16, 1982. The final report will be generated from the actions of the Executive Council, after careful consideration of the ad hoc Committee's report, on February 5 and 6. A copy of this report will accompany the March PRESIDENT'S NEWSLETTER.

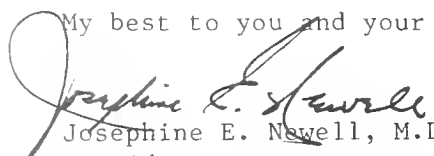
On December 29, 1981, James E. Davis, Joseph D. Russell, Don Chaplin, and I met with representatives of the Legislative Committee on State Employee's Hospital and Medical Benefits. In the last NEWSLETTER, I discussed some ASO recommendations of the William M. Mercer Company to this Legislative Committee. Since many of those recommendations caused concern to many physicians, the four of us met with them for discussion of those recommendations. In his discussion on Ambulatory Surgery, Jim Davis warned against confining such services to a specific list of procedures because of the danger of excluding some procedures which may be safely performed in an ambulatory setting. We advised that the plan provide for a full range of hospital preadmission and hospital outpatient testing, as a cost containment measure. We questioned the cost-effectiveness of mandatory second surgical opinion for six frequently performed surgical procedures. We expressed our concern at a limitation on prenatal visits and our approval of the "prudent buyer" concept.

Although the Mercer Company stated that the proposed ASO plan would not "shift costs to the State Employee," we disagreed. The Plan advises that the State contract with a carrier to process claims, collect the data, interpret its own data, set up its own review system for the stated purpose of denial of hospitalization claims (sharing the "savings" with the carrier, as an incentive), determine for itself the "savings," and finally, tell the State how much "bonus" should be paid to this same carrier (in addition to its claims processing fee) because it has denied payment for the health care of a particular employee.


Since it would be far more profitable for the carrier to deny claims, the State may find many claims denied through retrospective review, after the hospital service has been rendered. Both the State Employee and the hospital will question such a denial of payment. The hospital will bill the sick State Employee for the hospitalization and the costs will be "shifted" to the employee. The Plan does recommend prospective, concurrent, and retrospective claim review.

In addition to all of the above, the Executive Council will consider the feasibility study on the addition of one or two floors to our Headquarters building, the membership drive and further development of the Administrative Code. Now, if that's not enough to keep them all busy for the full day and a half meeting, I'll think of something else!

My best to you and your family,


Josephine E. Newell, M.D.
President

There's more to **ZYLOPRIM[®]** than (allopurinol).

- 
- From Burroughs Wellcome Co. – the discoverer and developer of allopurinol
 - Patient starter/conversion kits available for easy titration of initial dosage
 - Patient compliance pamphlets available
 - Continuing medical education materials available for physicians



Prescribe for your patients as you would for yourself.

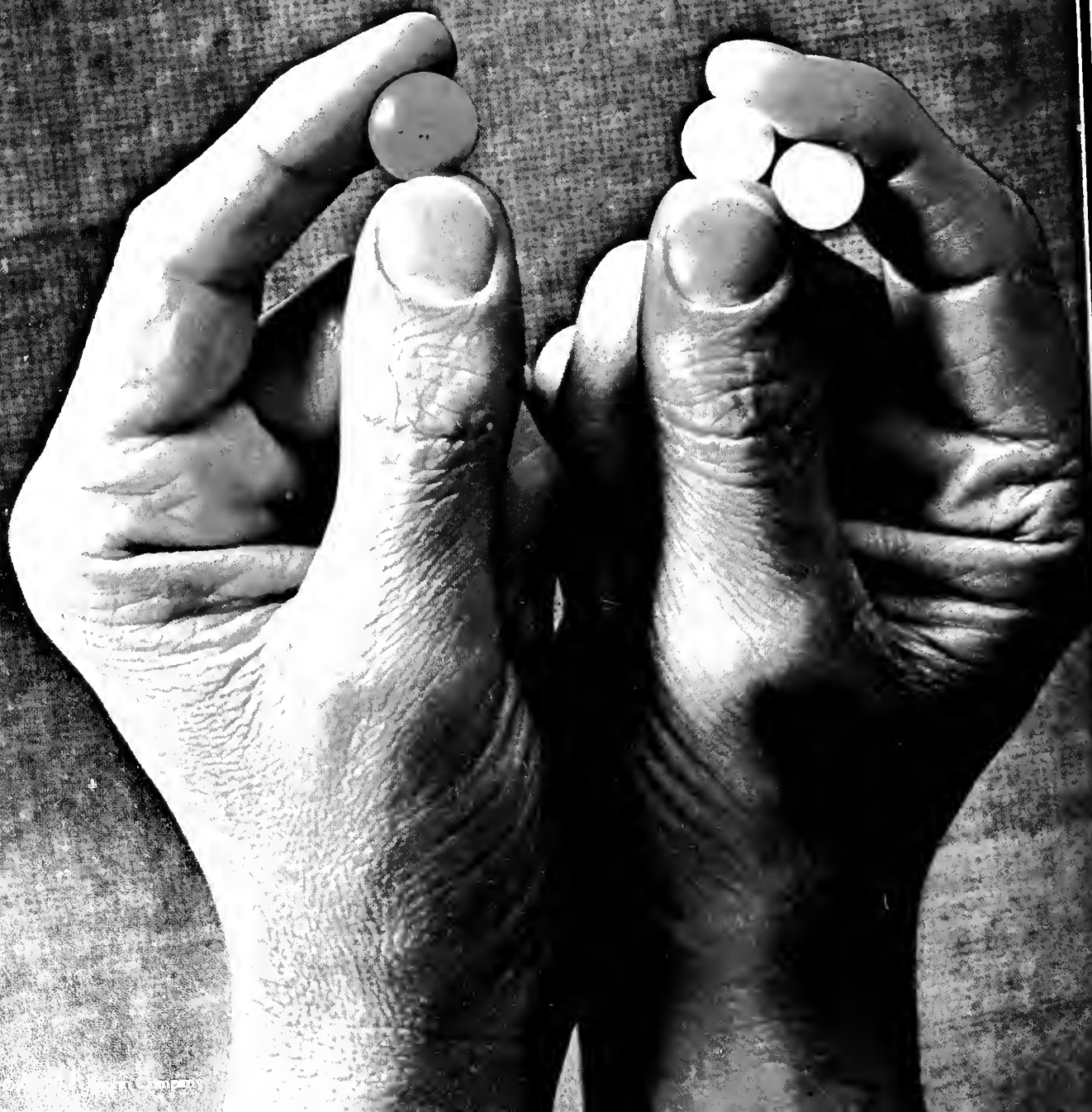
*Write "D.A.W.," "No Sub," or "Medically Necessary,"
as your state requires, to make sure
your patient receives the original allopurinol.*



Burroughs Wellcome Co.
Research Triangle Park
North Carolina 27709

Motrin® vs aspirin w/codeine..

(ibuprofen)



compare the analgesic effect

A Motrin 400 mg dose relieved postsurgical dental pain as effectively as a combination of 650 mg aspirin and 60 mg codeine (two aspirin-with-codeine No. 3 tablets) in a study of 129 patients.

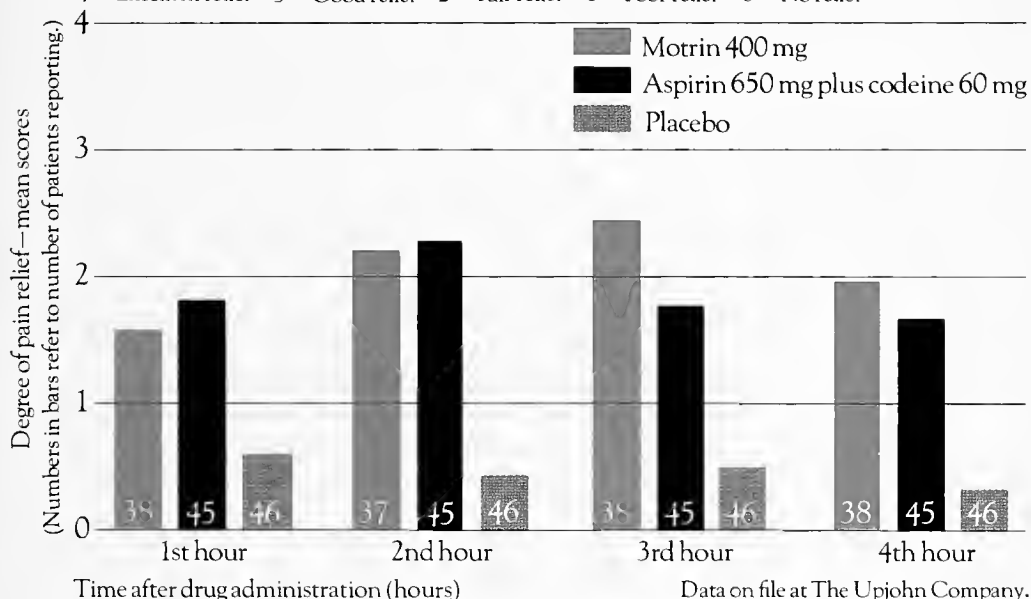
In this double-blind, placebo-controlled, randomized study, no statistically significant difference in relief of pain was noted at 1, 2, and 4 hours between the Motrin and aspirin-with-codeine groups... with Motrin being significantly more effective ($p = 0.03$) at the three-hour interval.

Active treatment was significantly more effective ($p < 0.0001$) than placebo at all time intervals.

Comparison of pain relief

Motrin vs aspirin-codeine combination

4 = Excellent relief 3 = Good relief 2 = Fair relief 1 = Poor relief 0 = No relief



One tablet q4-6h prn

For relief of mild to moderate pain:

Motrin[®] 400mg TABLETS
ibuprofen, Upjohn

- Not a narcotic • Not addictive • Not habit forming • Nonscheduled
- Acts peripherally • Relieves pain rapidly • Relieves inflammation • Indicated in acute and chronic pain • Well tolerated (The most common side effect with Motrin is mild gastrointestinal disturbance.)

Please turn the page for a brief summary of prescribing information.

Upjohn

Motrin[®] (ibuprofen)

now proved an effective analgesic for mild to moderate pain

Motrin[®] Tablets (ibuprofen, Upjohn)

Indications and Usage: Relief of mild to moderate pain

Treatment of signs and symptoms of rheumatoid arthritis and osteoarthritis during acute flares and in long-term management. Safety and efficacy have not been established in Functional Class IV rheumatoid arthritis.

Contraindications: Individuals hypersensitive to it, or with the syndrome of nasal polyps, angioedema and bronchospastic reactivity to aspirin or other nonsteroidal anti-inflammatory agents (see WARNINGS).

Warnings: Anaphylactoid reactions have occurred in patients with aspirin hypersensitivity (see CONTRAINDICATIONS).

Peptic ulceration and gastrointestinal bleeding, sometimes severe, have been reported. Ulceration, perforation, and bleeding may end fatally. An association has not been established. Motrin should be given under close supervision to patients with a history of upper gastrointestinal tract disease, only after consulting ADVERSE REACTIONS.

In patients with active peptic ulcer and active rheumatoid arthritis, nonulcerogenic drugs, such as gold, should be tried. If Motrin must be given, the patient should be under close supervision for signs of ulcer perforation or gastrointestinal bleeding.

Precautions: Blurred and/or diminished vision, scotomata, and/or changes in color vision have been reported. If these develop, discontinue Motrin and the patient should have an ophthalmologic examination, including central visual fields.

Fluid retention and edema have been associated with Motrin, use with caution in patients with a history of cardiac decompensation.

Motrin can inhibit platelet aggregation and prolong bleeding time. Use with caution in persons with intrinsic coagulation defects and those on anticoagulant therapy.

Patients should report signs or symptoms of gastrointestinal ulceration or bleeding, blurred vision or other eye symptoms, skin rash, weight gain, or edema.

To avoid exacerbation of disease or adrenal insufficiency, patients on prolonged corticosteroid therapy should have therapy tapered slowly when Motrin is added.

Drug interactions. *Aspirin:* Used concomitantly may decrease Motrin blood levels. *Coumarin:* Bleeding has been reported in patients taking Motrin and coumarin.

Pregnancy and nursing mothers: Motrin should not be taken during pregnancy nor by nursing mothers.

Adverse Reactions

Incidence greater than 1%

Gastrointestinal: The most frequent type of adverse reaction occurring with Motrin is gastrointestinal (4% to 16%). This includes nausea; epigastric pain; heartburn; diarrhea, abdominal distress, nausea and vomiting, indigestion, constipation, abdominal cramps or pain, fullness of the GI tract (bloating and flatulence). **Central Nervous System:** Dizziness; headache, nervousness. **Dermatologic:** Rash* (including maculopapular type), pruritus. **Special Senses:** Tinnitus. **Metabolic:** Decreased appetite, edema, fluid retention. Fluid retention generally responds promptly to drug discontinuation (see PRECAUTIONS).

*Incidence 3% to 9%.

Incidence less than 1 in 100

Gastrointestinal: Upper GI ulcer with bleeding and/or perforation, hemorrhage, melena. **Central Nervous System:** Depression, insomnia. **Dermatologic:** Vesiculobullous eruptions, urticaria, erythema multiforme. **Cardiovascular:** Congestive heart failure in patients with marginal cardiac function, elevated blood pressure. **Special Senses:** Amblyopia (see PRECAUTIONS). **Hematologic:** Leukopenia, decreased hemoglobin and hematocrit.

Causal relationship unknown

Gastrointestinal: Hepatitis, jaundice, abnormal liver function. **Central Nervous System:** Paresthesias, hallucinations, dream abnormalities. **Dermatologic:** Alopecia, Stevens-Johnson syndrome. **Special Senses:** Conjunctivitis, diplopia, optic neuritis. **Hematologic:** Hemolytic anemia, thrombocytopenia, granulocytopenia, bleeding episodes. **Allergic:** Fever, serum sickness, lupus erythematosus syndrome. **Endocrine:** Gynecomastia, hypoglycemia. **Cardiovascular:** Arrhythmias. **Renal:** Decreased creatinine clearance, polyuria, azotemia.

Overdosage: In cases of acute overdosage, the stomach should be emptied. The drug is acidic and excreted in the urine, so alkaline diuresis may be beneficial.

Dosage and Administration: Rheumatoid arthritis and osteoarthritis, including flares of chronic disease: Suggested dosage is 300, 400, or 600 mg t.i.d. or q.i.d. Mild to moderate pain: 400 mg every 4 to 6 hours as necessary for relief of pain. Do not exceed 2400 mg per day.

Caution: Federal law prohibits dispensing without prescription.

For additional product information, see your Upjohn representative or consult the package insert.

Upjohn THE UPJOHN COMPANY
Kalamazoo, Michigan 49001 USA

MED B-4-S

It's time we took
arthritis seriously

It's a myth that arthritis is just the minor aches and pains of old age. It's a majorcrippler that attacks. Anybody. Anytime. 31 million Americans have it. There are almost a million new cases a year. And six out of ten are under 60. Symptoms can come and go for years. So if you don't know the warning signals, find out. If you'd like information that could help you—or you'd like to help us—write to the Arthritis Foundation, Box 19000, Atlanta, GA 30326.



ARTHRITIS
FOUNDATION

An ounce of prevention... is worth a pound of cure.

Good advice? You know it is. As a doctor, you've seen what prevention can do for people. Prevention is an important part of staying healthy.

The same prevention can be applied to insurance . . . prevention against financial hardships caused by a covered sickness or injury that may keep you from your practice.

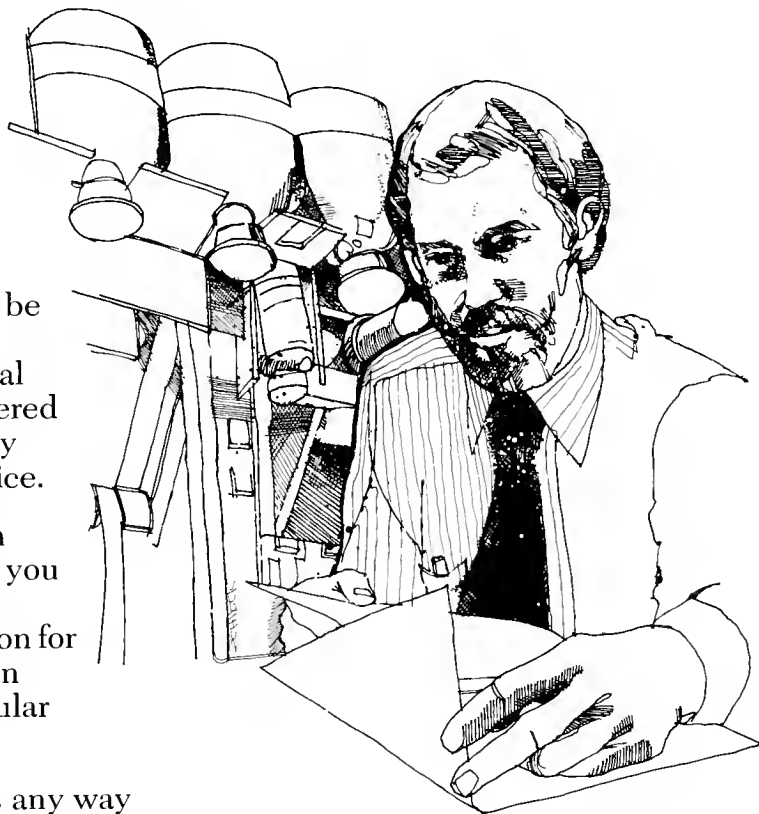
As a member of the North Carolina Medical Society, you are eligible to apply for disability income protection for younger doctors. This plan can provide you with regular monthly benefits.

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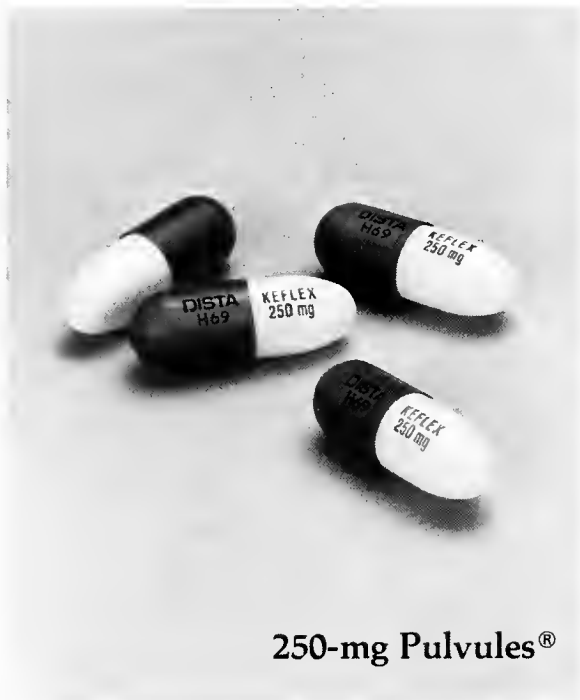
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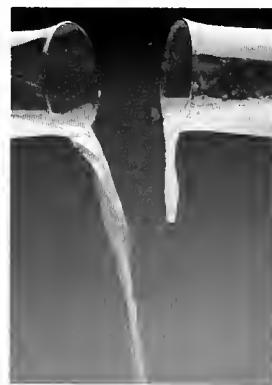
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Glomerulonephritis Associated with Infective Endocarditis In a Pediatric Patient

David B. Allen, M.D., Aaron L. Friedman, M.D.,
Byron Croker, M.D., Ph.D., and Stephen G. Osofsky, M.D.

ABSTRACT Glomerulonephritis mediated by the deposition of circulating immune complexes may occur in association with infective endocarditis. A child with tetralogy of Fallot and infective endocarditis who developed membranoproliferative glomerulonephritis and renal failure requiring dialysis is presented. The frequency and severity of glomerulonephritis correlates most closely with the duration of untreated infection. Antibiotic therapy is the critical factor in successful management of such patients. The role of intravenous methylprednisolone in the treatment of life-threatening glomerulonephritis is unclear. Early institution of dialysis may be beneficial by allowing a more liberal intake of protein and calories while providing adequate control of electrolyte disorders. The prognosis for antibiotic treated patients with infective endocarditis and glomerulonephritis is generally favorable; however, residual renal insufficiency may occur. An expanding population of children surviving with medically and surgically treated congenital heart defects is at increased risk for infective endocarditis and accompanying glomerulonephritis.

THE kidney may be involved in infective endocarditis by embolization of vegetations and/or immune-complex deposition within the glomerulus.¹⁻⁵ Embolic phenomena in infective endocarditis are well recognized and account for such extracardiac manifestations as petechiae, Osler's nodes, and neurologic deficits.⁶ Emboli to the kidney may result in minimal urinary abnormalities (e.g., mild hematuria or proteinuria) but do not usually result in reduced renal function.⁵ However, glomerular deposition of circulating immune complexes and subsequent immune-complex mediated inflammation, particularly through serum complement activation, may result in significant renal insufficiency.³⁻⁵ Depressed serum complement in the presence of urinary sediment abnormalities and reduced renal function are valuable indicators of immune-complex glomerulonephritis.^{3-5,7,8} This type of glomerulonephritis is seen almost exclusively

in the course of prolonged infective endocarditis (greater than two months)⁹ and therefore is most likely to occur when the infecting organism is of low virulence.^{9,10} Few clinical reports of glomerulonephritis with infective endocarditis have appeared. We report a 15-year-old male with tetralogy of Fallot who had infective endocarditis with positive blood culture and who developed membranoproliferative glomerulonephritis and renal failure which required dialysis. Through this case study and review of the literature, we elaborate on the relationship between infective endocarditis and immune-complex mediated glomerulonephritis. The pathogenesis of this entity, its clinical presentation, and current therapeutic modalities are discussed in an effort to emphasize the importance of immune-complex mediated glomerulonephritis.

CASE REPORT

A 15-year-old white male with tetralogy of Fallot who, following two repair procedures was left with residual right outflow tract obstruction, presented in October, 1980,

with a several month history of progressive fatigue and malaise. Physical examination revealed a chronically ill boy with a temperature of 101°F, a blood pressure of 120/60 mm Hg, harsh systolic and blowing diastolic cardiac murmurs, a fine petechial rash on both lower extremities, and peripheral pitting edema.

Initial blood studies showed hemoglobin 7.0 g/dl, white blood cell count 7,700 cells/mm³ with 72% neutrophils, 12% bands, 8% lymphocytes, and 4% monocytes; the platelet count was 209,000 cells/mm³. Serum chemistries included potassium 6.0 mEq/l, blood urea nitrogen 137, calcium 7.9, phosphorus 7.0, creatinine 7.3 (all mg/dl), and albumin 2.2 g/dl. Urinalysis revealed ++++ proteinuria, a strong benzidine reaction and numerous red blood cells and red blood cell casts. Creatinine clearance was 4 ml/min/1.73 m², with urine output of 200-300 ml/day. Whole hemolytic complement (CH50) was less than 2 units/ml (normal 35-50). Erythrocyte sedimentation rate was 50 mm/hr (normal 1-15).

Intravenous penicillin and genta-

From the Departments of Pediatrics and Pathology, Duke University Medical Center, Durham, N.C.
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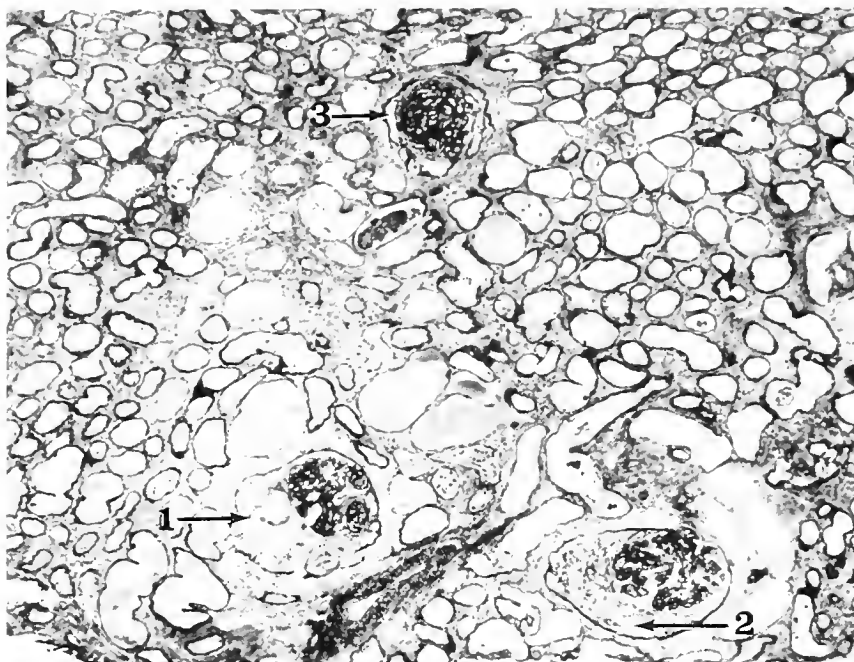


Fig. 1. A representative view of the renal cortex demonstrating two of the three glomeruli to have crescents (arrow 1,2) and the third to be globally sclerotic (arrow 3). Focal tubular atrophy and interstitial widening are present. (PAMS, 80x original magnification)

micin were begun. Fluids and protein intake were restricted and hyperkalemia controlled. Blood cultures obtained on admission were positive for *Streptococcus mutans*; gentamicin was discontinued. Circulating immune complexes were measured using a modification of the method described by Hay et al¹¹ at a level of 2.1 $\mu\text{g/ml}$ (normal less than 0.9). ASO titer was less than 200 IU. Blood cultures on the fourth hospital day showed no growth.

Because of unremitting renal failure, continuous ambulatory peritoneal dialysis (CAPD) via a Tenckhoff catheter was begun on the 11th hospital day. A percutaneous renal biopsy was performed. Light microscopy demonstrated diffuse, generalized, proliferative glomerulonephritis with crescent formation and scarring (Figure 1). Immunofluorescence revealed granular deposition of C1q, C3, IgM, slight IgA, and little IgG (Figure 2). Electron microscopy showed predominantly subendothelial deposits morphologically similar to those seen in membranoproliferative glomerulonephritis type 1 (Figure 3). A five-day course of intravenous methylprednisolone (750 mg/day) was started on the 17th hospital day. At dis-

charge serum creatinine had fallen to 4.0 mg/dl.

The patient continued CAPD for two months after insertion of the Tenckhoff catheter. Improvement

of his endogenous renal function (serum creatinine 1.8 mg/dl) permitted termination of dialysis and removal of the catheter. Since then, renal function has remained stable, but proteinuria and hematuria have persisted. Pertinent laboratory data are presented in Table I. His management now includes moderate fluid and salt restriction, oral phosphate binder and alternate day prednisone.

DISCUSSION

Pathogenesis. The presence of glomerular lesions in patients with infective endocarditis was recognized in 1910 when Löhlein¹ attributed areas of focal renal infarction and necrosis in these patients to "capillary thrombosis." Isolation of bacteria from several lesions led him to postulate direct septic embolization as a cause of minute renal infarcts, an interpretation shared by Baehr.² Subsequent studies, however, failed to demonstrate organisms within these "embolic lesions," and explanations for their development remained obscure. Williams and Kunkel³ proposed that such injury was immune-mediated after demonstrating hypocomplementemia and

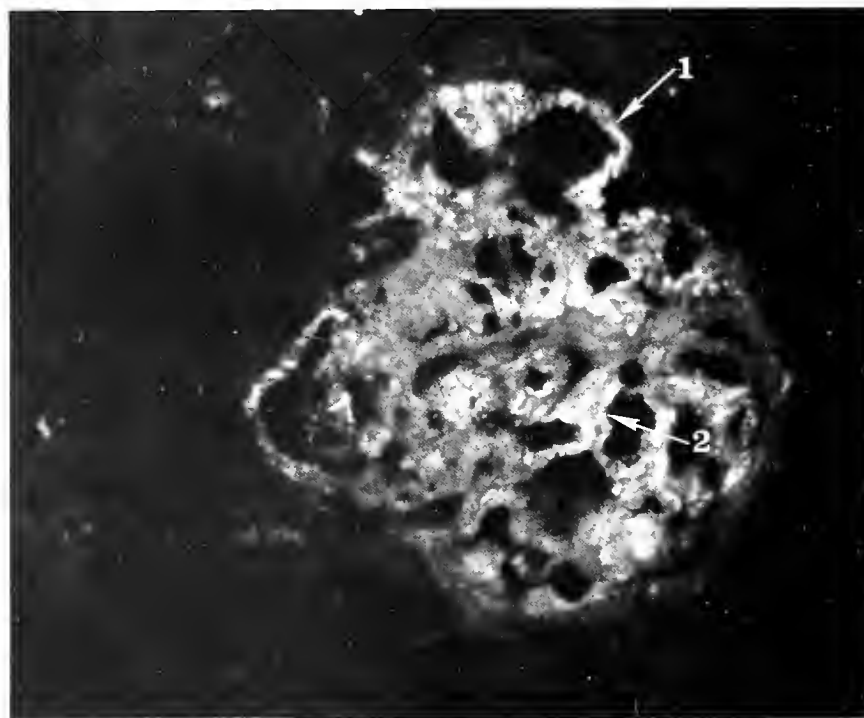


Fig. 2. Immunofluorescent study of a single glomerulus demonstrating IgA deposition along areas of capillary walls (arrow 1) and within areas of the mesangium (arrow 2). (FITC-rabbit-anti-human IgA, 325x original magnification)

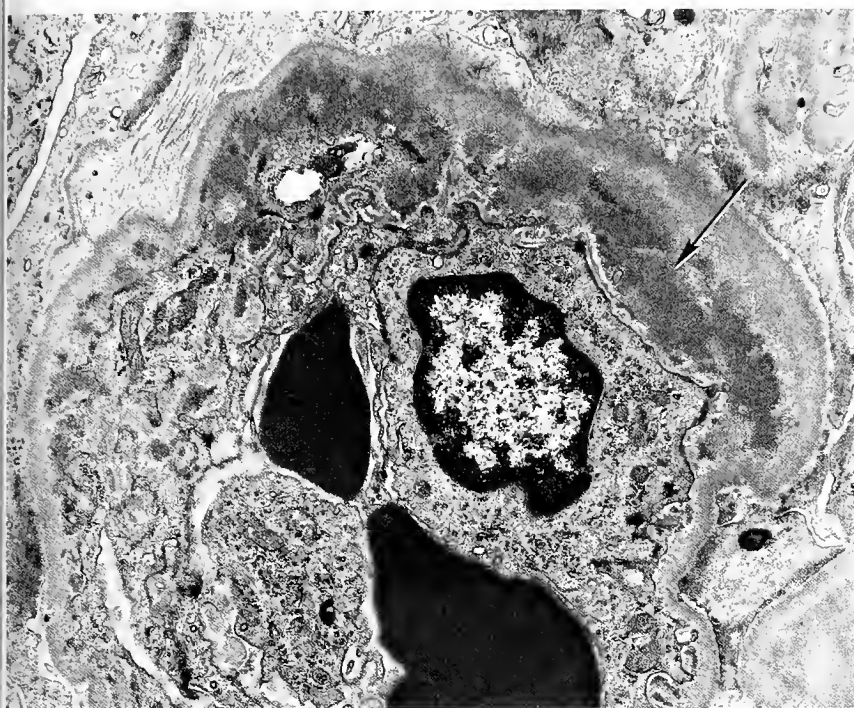


Fig. 3. Electron micrograph of a typical capillary loop in which the lumen is partially obliterated and portions of very dark staining red cells remain. The capillary wall is wrinkled and thickened by subendothelial deposits (arrow) and mesangial interposition. (5000x original magnification)

circulating rheumatoid factor in patients with subacute bacterial endocarditis. Complement returned to normal with antibiotic therapy. Direct evidence for an immunologic mechanism in infective endocarditis-associated renal disease was provided by Levy and Hong,⁴ who were able to elute antibody from the kidney of a patient with renal failure secondary to enterococcal endocarditis, and to show that the antibody recombined specifically with bacteria cultured from the patient. Gutman et al⁵ clarified the immune complex nature of glomerulonephritis with infective endocarditis in a systematic review of nine patients in whom serologic evidence for active complement consumption was correlated with electron microscopic and immunofluorescent evidence for immune complex-mediated inflammation. Furthermore, Bayer et al¹² have recently demonstrated the presence of circulating immune complexes in 97% of their patients with infective endocarditis. It appears likely that infective endocarditis creates an environment of persistent bacteremia in the patient, resulting in prolonged contact between host

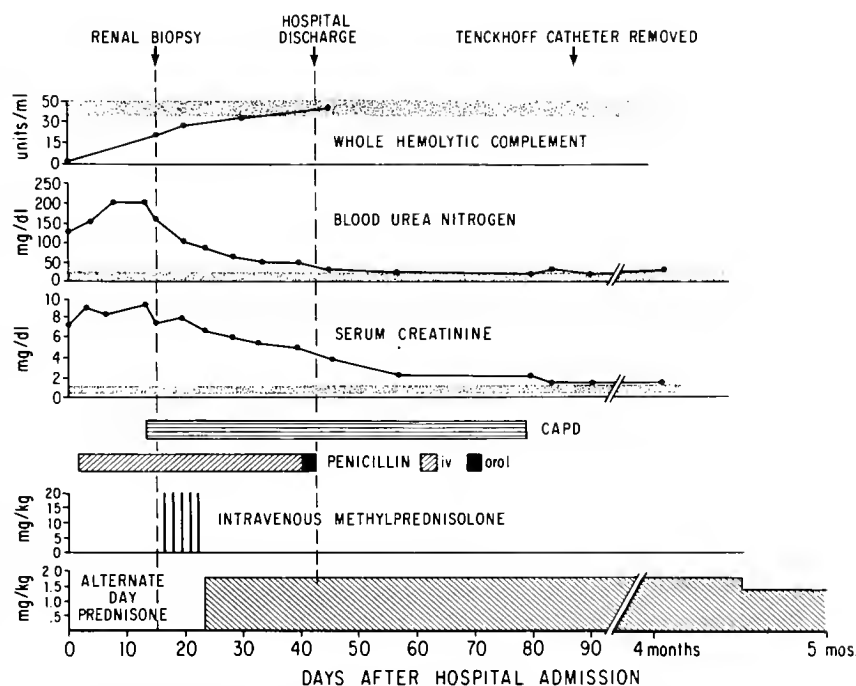
of antigen, leading to the formation of soluble immune complexes. These circulating complexes deposit in the glomerular basement membrane activating complement and eliciting an inflammatory response. The details of such an immune-complex-mediated biologic effect are the subject of a recent review.⁸

Clinical Presentation. Patients with infective endocarditis may present with a broad spectrum of renal disease. A recent review⁹ of 30 patients identified acute oliguric renal failure and hematuria as the most frequent manifestations of glomerulonephritis while the acute nephritic syndrome and malignant hypertension occurred infrequently. In contrast to these more dramatic presentations were several clinically "silent" cases, manifested only by slight proteinuria and microscopic hematuria. Further, patients without overt renal abnormalities are likely to have histopathologic evidence of renal disease on biopsy.¹³

The duration of untreated infective endocarditis correlates with both the frequency and severity of glomerulonephritis.⁹ This associa-

and foreign protein. This simultaneously stimulates antibody production and provides a constant source

TABLE I.



Clinical course during hospitalization and follow-up. Stippled areas represent range of normal. CAPD: continuous ambulatory peritoneal dialysis.

tion was first suggested in the pre-antibiotic era by Bell,¹⁰ who reported that the majority of patients with bacterial endocarditis with severe renal insufficiency had "sub-acute" infections usually caused by alpha hemolytic streptococci. In contrast, acute infective endocarditis and prosthetic valve infections (usually staphylococcal) have been less commonly associated with renal disease.^{5,9} Glomerulonephritis in these patients does not usually impair renal function and is characterized by mild proteinuria and/or microscopic hematuria.⁹ In our patient, with severe oliguric renal failure, evidence of illness had existed for several months. Severe clinical manifestations of renal disease seem therefore to occur predominantly in patients with chronic or "sub-acute" illness due to relatively indolent organisms, rather than in those with acute illness caused by more virulent strains.

The observations above are supported by studies which relate the severity of histopathologic findings to the duration of illness before treatment. Light microscopy has revealed two classical patterns of glomerular involvement in these patients. Focal "embolic" glomerulonephritis, initially described by Löhlein¹ as "embolic non-suppurative focal nephritis," is characterized by a segmental hyaline appearance, intracapillary thromboses, fibrin deposits, and thickening of the glomerular basement membrane. This lesion, which may represent microscopic fibrin emboli,⁵ must be differentiated from "diffuse proliferative glomerulonephritis" described by Bell in 65% of his patients with histologic renal involvement.¹⁰ This proliferative endocapillary and extracapillary glomerulonephritis⁹ is seen in those with the most severe renal dysfunction, as in our patient. The "focal embolic" lesion is infrequently associated with renal dysfunction in the absence of accompanying diffuse proliferation.⁵ Beaufils et al⁹ considered the interval between onset of the infection and clinical glomerulonephritis as an important determinant of glomerular pathology. Short delays were associated with endocapillary proliferation only,

whereas longer ones (greater than two months) were associated with more severe glomerulonephritis and crescent formation. The findings of "generalized proliferative glomerulonephritis with crescents and scarring" in our patient may explain the severity of renal dysfunction, and suggest that his underlying infection had been present for months.

Immunofluorescence in glomerulonephritis associated with endocarditis typically reveals granular "lumpy-bumpy" deposition of IgG, IgA, IgM and β_2 C on the glomerular basement membrane and/or in the mesangium. These deposits, indicative of immune-complex deposits have been described in focal and diffuse proliferative lesions.⁵ Our patient had a predominance of IgM, with little IgG; his serum immunoglobulin profile was normal. This pattern, while atypical, has also been noted in patients with membranoproliferative glomerulonephritis and hypocomplementemia.⁷

On electron microscopy, electron dense deposits have been detected in subepithelial, intramembranous, subendothelial and mesangial sites.⁵ Gutman et al⁵ linked large subepithelial deposits with staphylococcal endocarditis, while infection with other organisms tended to result in deposits localized to the endothelial surface. Beaufils et al,⁹ however, could not demonstrate a clear relationship between glomerular lesion and infecting organism in their patients, and suggested that the correlation noted by Gutman reflected the tendency of certain organisms to cause an acute or indolent endocarditis. Electron microscopy of our patient's biopsy revealed subendothelial deposits morphologically similar to membranoproliferative glomerulonephritis type I. This is an unusual variant of post-infectious immune-complex glomerulonephritis.

Management. Antibiotics are critical in treatment of infective endocarditis and glomerulonephritis. In our patient, intravenous antibiotics were administered promptly, resulting in early sterilization of blood. Many have observed improvement in renal function,⁵ elevation of complement levels,^{3,5,9} and disappear-

ance of rheumatoid factor³ after appropriate antibiotic therapy. Spair and King¹⁴ reported a 33% incidence of diffuse glomerulonephritis among 52 untreated patients with infective endocarditis, compared to the complete absence of such lesions among 25 treated subjects. Gutman et al⁵ described healing of glomerular lesions on repeat biopsy of treated patients, whereas two untreated patients died with decreasing renal function. Bayer et al¹⁵ demonstrated a decline in circulating immune complexes within six weeks of initiation of antimicrobial therapy, a decrease which correlated with rise in serum complement, sterilization of blood and disappearance of extravalvular signs. Recovery of renal function has been found to depend on rapid and complete cure of infection, rather than the histologic nature of the glomerulonephritis.⁹ Eradication of a bacteremia is important in preventing further immune complex-mediated damage in these patients.

Dialysis has been frequently employed in the management of renal failure secondary to infective endocarditis.^{5,9} Several considerations contributed to the institution of peritoneal dialysis in our patient. Conservative medical management failed to prevent a progressive rise in serum blood urea nitrogen, creatinine and potassium and persistent anemia and acidemia could not be adequately treated in the presence of oliguria. In addition, we did not think that further caloric restriction could be tolerated by this chronically ill child. CAPD was therefore begun, permitting increased caloric intake and better control of electrolyte disorders and acidemia.

The therapeutic efficacy of methylprednisolone in endocarditis-associated glomerulonephritis is unclear. The clinical and pathogenetic similarities of this disease to systemic lupus erythematosus have been noted,⁵ suggesting a role for steroid therapy. Reports by Cole et al¹⁵ and Davis et al¹⁶ have described significant acute and long-term clinical improvement following high-dose "pulse" iv methylprednisolone therapy in patients with life-threatening crescentic glomerulonephritis. In

view of this patient's severe glomerular lesion on biopsy and strong evidence for immune complex-mediated inflammation, a five-day course of iv methylprednisolone, 750 mg/day, was administered after seven days of peritoneal dialysis at a time when the serum creatinine was 8 mg/dl. This was followed by a steady decline in serum creatinine concentration to a level of 1.8 mg/dl with oral prednisone and CAPD therapy five weeks after discharge. The increase in glomerular filtration rate observed in this and other patients after such treatment has been attributed to steroid-induced augmentation of renal blood flow¹⁵ anti-inflammatory action,¹⁷ or direct effect on the glomerular basement membrane.¹⁸ However, Pussell et al¹⁹ found that methylprednisolone in similar doses had no significant effect in reducing circulating immune complex levels in patients with infective endocarditis. Furthermore, the accurate assessment of the anti-inflammatory properties of steroids in this disease has been difficult because of simultaneous administration of antibiotics or institution of dialysis. While steroid therapy may have contributed to this patient's recovery, there is reason to believe (e.g., rising serum complement levels) he was improving at the time steroid therapy was begun. Thus, the place of steroids in the treatment of these patients remains unclear.

Outcome. Renal prognosis is generally favorable in non-operative patients who receive prompt treatment of their underlying infection. Pillsbury²⁰ reported no significant deterioration in renal function among his 33 treated cases. Beaufils et al⁹ noted that all their patients with infective endocarditis unrelated to surgery and treated with antibiotics recovered with either stable or normal renal function. Those with endocarditis after surgery suffered high mortality because of infection. Restoration of satisfactory renal function is not closely related to the nature of the glomerular lesion; recovery has been observed in cases of membranoproliferative glomerulonephritis with crescent formation, a lesion often considered irreversible. However, our experience and that of others suggests that renal disease following infective endocarditis should not be considered benign. Spitzer²¹ described a child with endocarditis and type I membranoproliferative glomerulonephritis years after tetralogy of Fallot repair who experienced gradual resolution of hematuria, proteinuria and hypocomplementemia over six months after treatment. Follow-up two years later, however, revealed residual renal damage with hypertension and proteinuria. Our patient has shown marked improvement in the five months after diagnosis but continues to have significant renal insufficiency: serum creatinine 1.8 mg/dl,

creatinine clearance 41 ml/min/1.73 m² and +++ proteinuria.

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PETER MERE LATHAM [1789-1875]

In universities, so that the things taught be good in themselves, education may be as miscellaneous and omnifarious and even as redundant as you please. The object is to rouse the mind and let it make acquaintance with its powers and inclinations, so that it may judge of its own natural fitness by what it is able to do the best.

Collected Works, Vol. II, "A Word or Two on Medical Education"

Malignant Pleural Mesothelioma: Difficulties in Diagnosis

Don V. Jackson, Jr., M.D., Richard B. Marshall, M.D.,
David A. Albertson, M.D., and Marc L. Slatkoff, M.D.

ABSTRACT Most of the workers exposed to asbestos in shipyards during World War II who are destined to develop malignant mesothelioma will probably present themselves over the next decade. Routine diagnostic procedures for chest lesions—bronchoscopy, pleural fluid cytology, needle biopsy of the pleura, and thoracotomy—may not yield the correct diagnosis. Electron microscopic analysis has been most helpful in establishing the diagnosis in a patient discussed in the present report and use of this technique is recommended in clinical situations suggesting the diagnosis of malignant pleural mesothelioma.

SELIKOFF and colleagues¹ have demonstrated an increased risk of death due to malignant mesothelioma among asbestos insulation workers in the United States and Canada. Pleural and peritoneal mesotheliomas accounted for 2.8% and 4.9% of the total deaths, respectively, recorded between 1967 and 1977 during long-term observation of nearly 18,000 asbestos insulation workers. A latent period of 2-4 decades has been noted with a sharp increase in deaths due to malignant mesothelioma at 35-39 years from onset of employment.¹

Antman et al have a relatively large experience with this rather rare tumor which is probably accounted for by the use of asbestos in shipyards along the East coast of the United States.² A recent survey³ has found the highest incidence of malignant mesothelioma in the United States occurring in the mid-Atlantic and Pacific states, where the shipbuilding industry is. Given the long latent period for development of this tumor, Antman et al have postulated that most of the workers exposed to asbestos in shipyards during World War II destined

to develop malignant mesothelioma will present during the next decade.² Therefore, physicians attending such workers should know about difficulties in diagnosing malignant mesothelioma. This case report illustrates some of the problems that may be encountered with this process.

CASE REPORT

A 61-year-old previously healthy man was referred because of pleuritic chest pain for two months and a right pleural effusion. He denied shortness of breath, anorexia, weight loss, or easy fatigability. He had been exposed to asbestos in a naval shipyard 35 years ago for about 1.5 years during which time he also smoked cigarettes. Bronchial washings were unrevealing, transcutaneous pleural biopsy showed fibrosis and thoracentesis revealed serosanguinous pleural fluid with characteristics of an exudate. A diagnosis of squamous cell carcinoma of the lung was made following cytologic examination of the pleural fluid. The patient sought a second opinion and was transferred to another center. A thoracentesis was performed, a cytologic diagnosis of adenocarcinoma was made, and one course of cyclophosphamide, 5-fluorouracil and Adriamycin was administered. On

return to our institution a thoracotomy was advised due to the discrepancy in diagnosis and relative lack of symptomatology. Preoperative chest x-ray showed persistence of the right pleural effusion. At surgery many 1-8 mm nodules were observed on the parietal and visceral pleural surfaces. Biopsies showed fibrosis, focal nonspecific inflammation, and mesothelial hyperplasia. Chemotherapy was discontinued postoperatively. A chest x-ray nine months later showed no progression of the effusion.

The patient noted subcutaneous nodules on his right chest a year later but was otherwise stable. On examination a 1.5 x 1.5 cm tender subcutaneous nodule was present in the posterior axillary line and multiple smaller nodules were found in the thoracotomy scar. Chest x-ray showed multiple parenchymal and pleural nodules in the right lung field. A diagnosis of adenocarcinoma was made after biopsy of one of the subcutaneous nodules. Electron microscopy, however, revealed cytologic features diagnostic of malignant mesothelioma (Figure 1). The patient was clinically stable so no therapy was advised.

Except for mild to moderate pain at the thoracotomy site, the patient did well for six months when he be-

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came dyspneic. Chest x-ray disclosed a large left pleural effusion, an increase in the size of pleural nodules in the right lung, and questionable lymphangitic spread of tumor in the left lung. Cytologic examination of the pleural fluid was suspicious but inconclusive. Pleurodesis by instillation of tetracycline through a thoracostomy tube was unsuccessful. Anorexia, rapid weight loss, and hypoxemia progressed rapidly. Chemotherapy with cyclophosphamide, Adriamycin, vincristine, and dexamethasone on two occasions was without effect and tumor progression followed administration of cis-platinum in combination with cyclophosphamide. The patient died of respiratory failure 24 months after presentation.

COMMENTS

Malignant pleural mesothelioma is usually characterized by insidious onset of chest pain and shortness of breath associated with unilateral pleural effusion on physical examination and on chest x-ray.^{2,4-6} Weight loss and easy fatigability may not be present initially; they were found in only 6.4% of 328 patients in one series.⁵ These clinical features do not allow differentiation from other tumors which may involve the pleura. Similarly, chest x-ray findings are usually not helpful in the diagnosis of malignant mesothelioma. Elmes and Simpson⁵ demonstrated radiographic changes suggestive of asbestosis, such as bilateral calcified pleural plaques, in only 12% of 242 patients.

Pathologic diagnosis may be very difficult, as in this case. Our patient underwent many diagnostic procedures including bronchoscopy, multiple thoracenteses, transcutaneous pleural biopsy, and thoracotomy without a specific histologic diagnosis being reached. After a puzzling, slowly progressive course, electron microscopy of a subcutaneous nodule obtained 17 months after onset led to a definitive diagnosis of malignant mesothelioma.

Several investigators have commented on the difficulty of establishing the diagnosis with either cytologic examination of the pleural fluid or needle biopsy of the pleura and

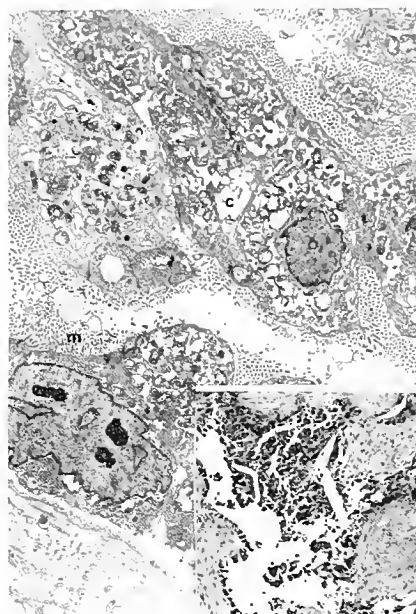


Figure 1. The micrograph shows papillary glandular elements in a fibrous stroma (x 100). Electron micrography demonstrates characteristic microvilli (m) and extensive cisternae (c) of mesothelial cells (x 5500).

have particularly noted the inability to distinguish malignant mesothelial cells in some cases from benign mesothelial cells and adenocarcinoma cells by light microscopy.^{4,5,7,8} Elmes and Simpson⁵ found a true positive pleural fluid cytology and needle biopsy in only 4% and 26% respectively of 172 cases, while Antman et al² made a definitive diagnosis of malignant mesothelioma in only 1 of 40 (3%) pleural fluid cytologies and 7 of 47 (15%) needle biopsies of the pleura. A correct diagnosis of epithelial mesothelioma was made in only 1 of 11 patients by cytologic examination of pleural fluid and in only 3 of 8 by pleural needle biopsies in a previous study from our institution.⁶

Although the reliability of pleural fluid cytology in establishing the diagnosis of malignant mesothelioma has been claimed,^{7,9} most investigators recommend thoracotomy as an essential diagnostic procedure.⁴⁻⁶ Elmes and Simpson,⁵ however, noted a correct diagnosis of malignant pleural mesothelioma in only 45 of 115 patients (38%) with "limited" biopsies at thoracotomy and 42 of 60 patients (70%) undergoing an "excision" biopsy. Appropriate stains and measurement of hyaluronic acid concentrations in the pleural fluid

may be helpful in suggesting the diagnosis in some cases.^{4,11}

Electron microscopy may be helpful in differentiating malignant mesothelioma from other neoplastic processes.^{8,10} A major cytologic feature of mesothelial cells on electron microscopy is the presence of bushy, long and slender microvilli arranged in complex and irregular patterns. These microvilli line the entire free surface of the cell membrane, whereas large numbers of microvilli in carcinomas will usually be found only on the surface of cells lining glandular cavities. Other morphologic features include prominent granular endoplasmic reticulum with cisternae often surrounding mitochondria. Cytoplasmic microfilaments, glycogen-containing intracytoplasmic granules, well defined desmosomes, and globular projections on the cell surface are usually present but are less constant.^{8,10}

The prognosis of malignant pleural mesothelioma remains poor with stage-dependent median survival times of 4-16 months.⁴ However, there are a number of reports which indicate improvement in survival with aggressive surgery, radiation therapy, and chemotherapy.⁴ With the expected increase in incidence of malignant mesothelioma, vigorous pursuit of the diagnosis is desirable if therapeutic trials are to be undertaken. To this end, a high index of suspicion and generous tissue biopsy for light and electron microscopic analyses are recommended.

Acknowledgment

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Civil War Medicine in North Carolina

Walter J. Loehr, M.D.

LATE in the Civil War, Lafayette Guild, the medical director of the Army of North Virginia, arranged a large transfer of disabled troops into North Carolina. In addition to advising the medical director of the Army Medical Corps in North Carolina about the anticipated move, Guild also informed Dr. Edward Warren, the surgeon general of North Carolina, of the move. When asked by his superior, Surgeon General S. P. Moore, whether the coordination of the transfer with Dr. Warren was necessary, Guild replied that his course appeared wise because "first, with the view of taking every precaution to secure for our wounded all care and attention possible; and second, *from a sense of respect to that State which has not only furnished to this army more soldiers but has shown more zeal and practical intelligence in the care of them than any other state in the Confederacy.*"¹

Indeed, Dr. Guild was accurate in his comments concerning the State of North Carolina. Having supplied approximately 200,000 troops to the Confederate Army, and having suffered 41,000 deaths among these forces, the Old North State did, indeed, contribute more soldiers than any other state to the Confederacy. A North Carolina Regiment, the 26th North Carolina, with an official casualty rate of 71.7% killed or wounded at Gettysburg, and actual losses exceeding 86%, suffered the highest regimental loss during the war for both armies.²

Dr. Guild's comment concerning the care provided by North Carolina

to its troops was also correct. Early in the war, under the leadership and stimulation of Governor Zebulon Vance and Surgeon General Warren, the Military Committee of the North Carolina Legislature passed a bill appropriating \$300,000 "for the relief of our sick and wounded soldiers." This amount was separate from and in addition to funds set aside by the Confederate States of America for the care of sick and wounded troops.³ The significance of this sum can be appreciated when it is considered that the entire budget passed by the United States Congress in January, 1861, for the Army Medical Corps of the United States was \$115,000.

While most general hospitals established by the Confederate Medical Corps during the Civil War were in or around Richmond, several active facilities were functioning in North Carolina, most notably the general hospitals in Charlotte, New Bern, Washington and Wilmington.⁴

When Surgeon General Warren ascertained that numerous ill and wounded soldiers could not secure accommodation in the general hospitals within the state because of overcrowding, the state established "wayside hospitals" near the principal lines of travel — near Asheville, Greensboro, Raleigh and Wilmington. These hospitals were provided with "comfortable beds, warm fires, suitable provisions, proper dressings for wounds, and with medications." The State of North Carolina also provided a Soldiers' Home, a place where Army men on leave might lodge. This was probably the first attempt to care for large numbers of troops on furlough. The official medical report to the governor stated that "3,000

Confederate officers and 30,000 men enjoyed the hospitality of this home during the war."

The Surgeon General's office in the state also insured that the hospitals of Virginia, Georgia and South Carolina were carefully searched for North Carolina soldiers and that these men be given the "means to supply their wants." An agent of the state was sent to Richmond "to keep himself accurately informed in regards to the arrival of prisoners from the North and to supply them with food, clothing and tobacco at the expense of the State of North Carolina."

The quality of medical care in the North Carolina hospitals was certainly on a par with that provided by other general hospitals in both the North and the South. Mortality rates averaged about 5%. Sepsis following surgery (hospital gangrene) and infectious diseases, most notably dysenteries and respiratory inflammations, were responsible for most fatalities. A surgical manual published by Dr. Warren entitled "An Epitome of Practical Surgery for Field and Hospital" and a similar volume by Dr. Joseph Chisolm entitled "A Manual of Military Surgery For the Use of Surgeons in the Confederate Army" were the standard texts used by physicians throughout the South. Chloroform, acquired by blockade runners from Europe, "internal trade" or smuggling from the Squibb manufacturing plant in New York, and "liberation" of Union Army supplies, was used almost exclusively for anesthesia.⁵ While amputation was by far the most common surgical procedure performed, successful results were reported for more innovative and complicated proce-

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dures, such as ligation of traumatic aneurysms.⁶

A laboratory was established early in the war near Lincolnton for the manufacture of drugs from indigenous plants. This laboratory continued production until the conclusion of the war and alleviated the continuous shortage of medication produced by the Federal blockade.⁷

An additional interesting feature of the Medical Department was "a

manufacture of artificial limbs for the special benefit of North Carolina soldiers."

A final compliment to the efficiency and diligence of the Medical Department within the State of North Carolina during the Civil War can be found in a paragraph in the official report of Surgeon General Warren to Governor Vance: "Of the sums placed in my hands by your Excellency, there is a large

balance to the credit of my appropriations."

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The properties of the system, and the nature of the remedy are necessary to be known from repeated and frequent trials before any accurate decision can be drawn; and as the body exhibits a series of functions, all going on at the same time, acting simultaneously and in subordination to each other, liable to be deranged by many causes both without and within its limits, the study of the nature of cause and effect with regard to it, has always been difficult, and requires the most accurate and persevering scrutiny and zeal in its prosecutors.

As the restorative powers of the system are generally present, in persons taken suddenly sick from a state of health; and as the power of the remedy also acts at the same time, how can the efficacy of these two agents be determined? In three ways, first, by determining the natural course of the disease, and thus appreciating in every stage the effects of the unassisted efforts of the restorative powers of the system: If they are insufficient, the effect of any remedy may be then proven. Thus it is ascertained that the venereal disease runs a certain course; first sores appear upon the genitals, then swellings in the groin, followed after a certain time by eruptions on the skin, sores in the throat, pains in the bones, etc. These symptoms succeed each other with considerable regularity; and end in consumption, caries of the bones, and death, if not arrested by some remedy: Mercury succeeds generally in putting a stop to it; and other remedies, as guaiacum, sarsaparilla, etc. assist; but without it the natural progress of the malady is slow and steady towards the destruction of the constitution. By its exhibition, the symptoms are arrested and the patient recovers. Other diseases, as hydrophobia, run their course; they are fatal; no remedy can arrest them. In both these cases, the natural progress of the disease exhibits a plain and uninterrupted course; in the one, the effect of medicine is plainly seen; in the other its inefficacy. Some diseases, on the contrary, invariably terminate, after running a particular course, in health; as the vaccine disease, the chicken pox, etc.

Secondly. By the immediate salutary effect of the remedy restoring at once the system, in increasing the restorative power, and also removing the morbid cause; thus suddenly restoring health to the system.

Thirdly. Where the restorative powers are in some instances sufficient for recovery, and in other cases they are not, the experience of the efficacy of a remedy in a vast number of instances determines its value: then the restorative powers become a vanishing quantity, and the excellence of the remedy is proved by the recovery of the system in many instances. — *Elements of the Theory and Practice of Physic*, by George Gregory, M.D., with notes and additions, adapted to the Practice of the United States, by Nathaniel Potter, M.D., and S. Colhoun, M.D., Vol. I, Philadelphia, Towar & Hogan, 1829.

Legislative Symposium 1981: A Report

Thomas L. Adams, Assistant Executive Director, Public Affairs,
North Carolina Medical Society

IN 1979 John T. Dees, M.D., then Chairman of the North Carolina Medical Society's Committee on Legislation, saw a need to make physicians aware of the opportunities available for involvement in government. Dr. Dees suggested that the Committee on Legislation sponsor a symposium on the How's and Why's of the legislative process. "Teachers" for the symposium would be members of the North Carolina General Assembly and Congressional Delegation. The Committee concurred, and the first legislative symposium was held in October of 1979.

In order to increase the number of physicians actively involved, Don C. Chaplin, M.D., Chairman of the Legislative Committee in 1980, proposed another symposium to the Committee on Legislation, which hosted the 1981 Legislative Symposium on October 30 and 31, and November 1, 1981, at the Myrtle Beach Hilton in Myrtle Beach, South Carolina.

The program began on Friday, October 30, with a reception honoring U.S. Representative Charles Rose (D-N.C.), who was the evening's guest speaker. His address dealt with how physicians, in an era of reduced participation by the federal government in health affairs, would have to assume a more active role. Physicians and their spouses then had the opportunity to visit informally with the Congressman and the North Carolina General Assembly members present. These visits help promote an interchange

of ideas and information among elected officials and physicians.

Communication between doctor and legislator is the most important element in a successful legislative program. While physician contact was good during the 1981 session of the legislature, much room for improvement was evidenced by the many close votes and passage by the State Senate of a "watered down" version of a bill to redefine the practice of chiropractic (S.B. 411). (This legislation is still pending before a committee of the House of Representatives and can be considered when the legislature returns in June.)

During the 1981 session of the North Carolina General Assembly, over 2000 pieces of legislation were introduced. The Medical Society took active positions on 40 of them and reviewed some 300 others for their potential impact on the health of our state's citizens and on the practice of medicine. Most of these bills concerned encroachments by ancillary provider groups upon what had traditionally been the practice of medicine.

Saturday morning began with a breakfast at which U.S. Representative James T. Broyhill, the ranking minority member on the House Energy and Commerce Committee, was the speaker. Congressman Broyhill has been involved in most of the health legislation introduced in Congress in the last fifteen years. As a member of the Health Subcommittee, the Congressman provided valuable insights about the

recent cuts in federal programs wrought by the new administration. (See page 124.)

Seminars followed breakfast. The first, entitled "The Ancillary Providers," featured panelists Senator Gerry Hancock, Democrat of Durham; Representative Jim Morgan, Democrat of Guilford; Representative Patricia Hunt, Democrat of Orange; and moderator Neil C. Bender, M.D., of Pollocksville. The seminar explored the activities of such provider groups as nurses, radiological technicians, pharmacists, and others who seek to broaden the scopes of their practices in the health care field. Each of the participants had been deeply involved in the 1981 session of the legislature with health care issues: Hancock co-sponsored the Medical Society's effort to repeal the 1977 optometric drug-use law and won many amendments to the chiropractic bill in the Senate; Representative Morgan chaired the House Judiciary III Committee, which considered bills ranging from abortion to the Nurse Practice Act, and served on the State Government Committee, which revised the Medical Practice Act. Representative Patricia Hunt was chair of a subcommittee which drafted a compromise bill on the Nurse Practice Act supported by the Medical Society.

Senator Bob Jordan, Democrat of Montgomery; Representative Harold Brubaker, Republican of Randolph and minority leader in the House of Representatives; and

Representative Wilma Woodard, Democrat of Wake and a member of the House Health Committee, led the second seminar, "The 1982 Legislative Elections." The message from this panel was to get involved, for every seat in the General Assembly this year is "up for grabs." The Representatives pointed out that legislators listen more carefully to those persons who have shown an interest in the candidates and the election process than to those who do not take the time to be involved. All indicated that they welcome active support of physicians but that physicians as a group were not doing enough with politicians, particularly given the large amount of medical legislation which is handled by the General Assembly. Hervy B. Kornegay, Sr., M.D., of Mount Olive served as moderator for the panel.

"How We View Doctors" was the subject discussed by Representative Thomas B. Hunter, Democrat of Richmond and Chairman of the House Health Committee; Senator John J. Cavanagh, Jr., Republican of Forsyth; and John H. Hall, M.D., of Guilford County, who served as moderator for the panel.

Representative Hunter and Senator Cavanagh expressed concern that physicians seem to be only moderately active in the legislative process. While both said that the Medical Society maintained an effective lobbying effort, they seldom heard from physicians themselves on issues. They indicated that, when they did not hear, they assumed there was not a problem with a given bill or that the bill was not particularly important to the practicing physicians in their districts. Both suggested that to enhance the effectiveness of lobbying in Raleigh physicians needed once again to become involved in elections and to communicate with their legislators in a timely manner when medical issues are before the General Assembly.

The final seminar was entitled "Communication With Your Legislators." Serving on the panel were Senator Marvin Ward, Democrat of Forsyth County and a member of the Human Resources Committee; Representative Thomas Rhodes, Republican of New Hanover County; and moderator Ron Levine, M.D., Director of Health Services of North Carolina. These legislators

reinforced what the doctors and spouses had heard from the panel, "How We View Doctors": that participation at all levels is the key to a successful legislative program — when medical issues are before the legislature as well as during the election campaign.

Saturday evening the Symposium concluded with a reception honoring the legislative participants and U.S. Senator John East. Senator East, speaker at the Saturday night banquet, gave a comprehensive presentation on the current administration in Washington. The Senator indicated that he fully supported President Reagan's domestic and foreign policies, saying that the policies needed time to work before being judged.

For those physicians and spouses who participated the weekend was a highly rewarding experience. They are now better prepared to maintain a dialogue with their representatives and to become actively involved not only in the upcoming elections but in the legislative process. Thus, the 1981 Legislative Symposium offered practical courses in communication, current issues, and effective ways to influence the outcome of legislation.

HALY ABBAS [d. 994]

Those things which are incumbent on the student of the Art are that he should constantly attend the hospitals and sick-houses; pay unremitting attention to the conditions and circumstance of their inmates, in company with the most acute professors of Medicine; and enquire frequently as to the state of the patients and the symptoms apparent in them, bearing in mind what he has read about these variations, and what they indicate of good or evil. If he does this, he will reach a high degree in this Art. . . . his treatment of the sick will be successful; people will have confidence in him and be favorably disposed towards him, and he will win their affection and respect and a good reputation; nor withal will he lack profit and advantage from them.

Legislative Symposium 1981: Health and the Budget

U.S. Representative James Thomas Broyhill

The following remarks were made by Representative James T. Broyhill at the Legislative Symposium held by the North Carolina Medical Society October 30-November 1, 1981, in Myrtle Beach, South Carolina. (For an account of the Symposium, see page 122.) The NORTH CAROLINA MEDICAL JOURNAL asked Broyhill several questions; his responses follow these remarks.

IT'S a pleasure to meet with you and to discuss our mutual interest in health legislation. I have always felt that it is extremely important for health care professionals and health legislators to maintain an open dialogue, and that is why I appreciate the opportunity to be here.

On the way down this morning, I was thinking about how similar our jobs are, that is, the job of the Congressman and the job of the doctor. I had never really realized this before, but the basic elements of our jobs are the same.

We both diagnose, and we both prescribe. Yours is usually a one-on-one basis. In Congress, our constituencies are somewhat wider.

You weigh patients; we weigh arguments and legislative strategies. You take the pulse of the patient; we read the pulse of our districts.

You operate. We are accused of being operators. In fact, at times, we both do a lot of cutting!

And, of course, we have many of the same problems you do. The public thinks we are a bunch of over paid professionals who spend most of our waking hours on the golf course. They often think we take the "easy way out" in solving problems. Just pass a bill or write a prescription — and the problem goes away!

I wish it were that easy. Curing a patient, or curing our nation's ills — they are both a tricky business and nothing to be made light of.

Last year, our country spent over

250 billion dollars on health care. That is 9.4 percent of our gross national product.

Forty years ago, health care expenditures represented only four percent of the GNP, or \$4 million. The year after the passage of Medicare, that peak year of 1970 which is often used as a bell curve standard in national health statistics, health costs were two percent of our gross national product — less than they are today.

The rate of increase for health care costs has exceeded the rate of inflation for over thirty years. The curve continues to point upwards.

This year, it is estimated that our national health care costs will rise by more than fifteen percent. You don't need commentator Paul Harvey to tell you that all of this adds up to bad news.

It is no coincidence that, along with the increase in health care expenditures, you have seen an increase in health regulations. We have watched with alarm the trend toward increasing federal financial responsibility for health care. Such a trend threatens to stifle innovation, reduce the freedom of our citizens to select their care or their practitioners, ration and limit the availability of medicine, and do to the greatest system of health care in the world what the Ayatollah Khomeini has done in Iran.

Yet, this threat of bureaucratized medicine has had one good effect. It

has many people searching for positive alternatives.

And with recent legislative initiatives, with a move toward free enterprise, individual and local responsibility, and a decentralized health care delivery system, we can still not rest easy. Despite the fact that we have the best health care system in the world, despite the fact that we spend more on health care than the gross national products of all but nine nations, we lag behind



United States Representative James Thomas Broyhill (R-10th District) of Lenoir, North Carolina, graduated from the University of North Carolina with a degree in Business Administration and was associated with Broyhill Industries of Lenoir until 1962, when he was elected to the 88th Congress. Broyhill currently serves as the ranking minority member of the Energy and Commerce Committee and its Health Subcommittee. The author of many health related bills, he is considered one of the most articulate spokesmen in Congress on health issues.

several nations in infant mortality statistics, accidental and homicidal deaths, and the frequency of many malignancies. Too many of our citizens suffer from debilitating chronic diseases, from obesity and digestive diseases which public health education and the administration of "early warning care" could have prevented.

Make no mistake about it. United, we are moving toward a resolution of these problems. But we still have far to go.

Let me give you a review of some recent health legislation. This will show you how I feel we are making progress in our battle to ensure responsible spending of federal funds and still deliver the best health care found in the world. After that, I will make my predictions for our future health agenda in the Congress.

In March, the President announced an ambitious plan to restore the health of our nation's economy. The "Program for Economic Recovery" entailed a number of health program reforms, including a preventive health and a health services block grant. Of course, these were later modified somewhat.

The magnitude of this undertaking — the so-called budget reconciliation bill was some 540 pages of very small type — was used as an opportunity to effect an overall review of government programs and where we thought the country should be heading. This allowed us to reauthorize, revamp and consolidate many of the health programs, some of which were due to expire in the coming months. In the end this cut back on the number of laws on the books, cut back on the number of regulations administered by the agencies, and freed up our time for other pursuits.

As you can imagine, there was not a health constituency whose programs were left unconsidered. Congress was bombarded by all sides. It seemed like every interest group who had a representative in Washington visited with us and suggested changes they thought were necessary. In fact, some who didn't have Washington representatives sent delegations from the localities.

It is common that during the most heated legislative period, a Congressman will have people with often-opposing viewpoints tugging at him from all directions. The latest budget debate was no exception. In fact, the last time I visited my tailor to be measured for a new suit, he said, "Congressman Broyhill, I don't understand this. Your arms are two inches longer than they were last year!" And if I seem a little shorter than I was the last time you saw me, it's because of all the pressure from the "folks on high" to get the job done and get it done right.

The word "reconciliation" used to be something you heard in connection with a separated husband and wife getting back together. Now, it's gained a whole new fame when it's connected with the word "budget."

I know there was a lot of confusion about what the reconciliation process meant. Very simply described, it is a process to reconcile the levels of spending you call for in the budget with the levels of spending which are set in the laws which create the programs.

Although it's simple to describe, it's a bit more difficult to implement!

As the senior Republican on the Energy and Commerce Committee, the committee with jurisdiction over health programs, I worked with the Administration, with House conservatives, with Congressmen Phil Gramm and Del Latta (who successfully offered the Gramm-Latta substitute which became the foundation for the new law) and with representatives of the health constituencies to draft a package of amendments including health program reforms.

While we did not see our package adopted intact, much of what emerged in the final bill points us in the right direction.

We adopted four health block grants, three of them true state block grants. They are the Maternal and Child Health Block Grant, the Health Prevention Block Grant, and the Alcohol, Drug Abuse and Mental Health Block Grant. The fourth block grant is called "Primary Care," and

it is basically comprised of what were previously known as the migrant and community health centers programs. This block grant provides the states with the option of running the program.

And while the four block grants do represent a compromise over the Administration's recommended two, what is important is that we have made genuine progress in moving control away from Washington and away from those who threaten national controls.

The reconciliation bill also included a reauthorization of most of the major health manpower programs with reduced levels of funding. We phased down support for the National Health Service Corps while retaining modest levels of funding for such beneficial programs as physician assistant training, nurse training and Area Health Education Centers.

These funding levels reflect a growing awareness in Washington that we should all be working together and targeting our aid to the areas which need help. In these days of budgetary constraint, it is an unfortunate fact that we simply cannot fund every program at as high a level of funding as it had received before. No matter how good our intentions, the budget simply won't support that kind of spending.

A good example of this need for targeting is the National Health Service Corps (NHSC) program. This program has had some very positive benefits in medically underserved areas; unfortunately, what we have found is that, for one reason or another, NHSC doctors were being sent into areas where they were not needed. This created unfair competition for those physicians who are on their own serving in remote and underserved areas.

I do not believe that the federal provision of health services and the assignment of medical personnel should become substitutes for the market forces of supply and demand. I think Congress should begin resisting the temptation of trying to solve complex reimbursement problems by delivering so-called "free-care" compliments of the federal government.

The reconciliation act makes good progress toward such a national policy.

Amendments to the Health Planning Act were also included in reconciliation, but cover only fiscal year 1982. Next year we will have a full debate on health planning's future. Meantime, we gave the Secretary of the Department of Health and Human Services and the governors of the states the authority to phase out many aspects of this program. The governor of a state may now declare that he does not want federal intervention in the local planning process and prohibit the federal government from continuing health system agencies in his state. The penalty that previously existed for states that were not in compliance with federal certificate-of-need laws was waived for one year. The Secretary was also given increased powers for decertifying health system agencies that are not effective. We also assured that health planning agencies no longer need concentrate their resources on reviewing every project suggested by a hospital or local community by giving the Secretary of the Department of Health and Human Services discretion to waive specific reviews now required of health planning agencies.

The other health programs which were addressed in reconciliation were Health Maintenance Organizations (HMOs) and Professional Standards Review Organizations (PSROs).

The HMO law was designed to demonstrate the viability of HMOs nationwide, a goal which I feel has been achieved. In 1971, there were only 39 HMOs serving 3.5 million people; now there are 240 serving nearly 10 million Americans. HMOs have been given the chance to grow and work and experiment, made possible with federal help. The time has come to begin turning over their financing and development to the private sector.

Accordingly, the budget reconciliation act phases out federal loans for HMO development. In turn, severely restrictive federal policy requirements for HMO qualification are eliminated, enabling a greater

variety of HMOs to be federally qualified. This should spur innovation and investment.

As with HSAs, there was a great deal of pressure for us to eliminate PSROs. This was not done in the budget bill, although we did cut the program back. The bill authorized the Secretary of Health and Human Services to assess the relative performance of each PSRO, and then gives him the authority to close up to 30% of them by September, 1982. The bill also permits PSROs to delegate review to hospitals where the hospital demonstrates its effectiveness in conducting the review.

Finally, the Omnibus Budget Reconciliation Act contains some changes in the Medicaid system.

It is no secret that the President wanted to place a cap on the federal payments to the states for Medicaid. The Health Subcommittee Chairman, Rep. Henry Waxman, countered this by offering a reduction in the so-called "federal match" which is provided to the states. It was our contention that such a reduction in matching could offer no real incentive for a state to hold down costs. A state could spend significantly more one year over the last, and then see the federal payment reduced by as little as one percent, according to the Waxman plan. The compromise which was finally adopted included a reduction in the federal match, but at a higher rate of reduction than that proposed by Waxman.

The law also allows states with hospital cost review programs, with high unemployment, or with fraud and abuse programs to off-set some of the reductions.

The new law contains the first restriction in the so-called "freedom of choice" philosophy of Medicaid which allows patients to choose any provider of a service. States are allowed to contract for laboratory services. In addition, states can apply to the Secretary of Health and Human Services, and he can waive the freedom of choice requirement for all other services such as physicians, laboratory, hospitals and clinics.

As you can see, we have made major revisions in the health care

delivery system. Never before have you as doctors had the opportunity to shape the future of health programs as you do now. I concur with a recent American Medical Association news editorial which states: "This is the time for local medical societies to take the initiative in ensuring that their states respond adequately to the changes. Indeed, this may be one of the last chances for medicine to contribute to how health programs are financed and administered for a long time to come."

I valued the advice that many of you provided to me during the budget reconciliation process. I heard from doctors all across the state. I hope you will again provide the counsel to state officials as they prepare to implement the block grants.

I don't mean to come to you with stories of doom and gloom, but I do not feel that our budget cutting days are over. Far from it.

As you know, the President has recommended an additional twelve percent reduction in federal program expenditures. This is over and above the reductions he recommended in March.

There is one indication that Congress cannot go along with an across-the-board approach. For example, the House has just passed the appropriations bill for the Department of Health and Human Services (HHS). The HHS budget is rather unusual: it receives more funding than any other government entity in the world, save for the entire U.S. Government and that of the Soviet Union.

The appropriations bill for HHS, as passed by the House, was some one billion dollars over the President's initial budget request and two billion dollars over his latest request. He has threatened that he will veto the bill unless a more moderate measure is laid upon his desk for signature.

Many of us have found these budget deliberations to be the most serious issue facing us in years. On the one hand, you have a need for continuation of some very vital services. No one likes to make a hard

decision to terminate benefits, say, to the aged or the infirmed.

On the other hand, you have a very pressing and real need to hold down the growth of government and the costs associated with government. Government-fueled inflation is a primary culprit in rising health care costs.

So, where do you draw the line? Where is the balance? These are serious concerns.

As I mentioned before, reauthorization of many programs in the reconciliation bill opened the way for action on a number of programs for which we might have delayed consideration under normal circumstances.

Certainly, the need for a free-market approach to health care and a look at the so-called "competition" bills will be in order next year.

The Administration has a task force which will be recommending an approach for addressing the issue of health care competition. Until that time, I feel it would be premature to endorse any one bill.

I will say that there is an urgent need for us to be careful in our deliberations. As the Executive Vice President of the AMA, James Sammons, once said, "Competition is a 'two-edged sword' that could slice at health care quality." He noted that the term "competition" is currently being knocked around like a tennis ball; whoever touches it last puts his own definition on the word.

What Congress does in trying to instill competition in the marketplace must not revert to just another metaphorical description of federal regulation and central planning. We must create an environment that gives consumers an incentive to be cost-conscious when selecting health insurance. We must do this in the spirit of reform, rather than revolution.

As I mentioned previously, the

health planning act expires next year, and we will most assuredly be examining that program. This is especially true in the view of the Administration's opposing the continuation of HSAs.

Food safety is another issue we will be taking a look at. There are many of us who feel that present Food and Drug Administration's interpretation of the Delaney Clause has been too strict. There is not a consensus in the Congress, though, on whether the blame should be traced to the law or administration of the law. In either case, I feel a review of this area will definitely be forthcoming.

A related issue is that of sodium labeling. There is a great deal of pressure on us to enact legislation to require that certain foods intended for human consumption be labeled as to the amount of sodium and potassium they contain. Such legislation has the support of 67 members of the House, including Chairman Henry Waxman.

Inasmuch as it is believed that somewhere upwards of 35 million American suffer from hypertension, if studies establish a correlation between salt intake and hypertension, this is an area which cannot be ignored. However, I personally believe that mandatory labeling is not the way to go. The FDA Commissioner is working on a voluntary approach, and we should give this a look before any mandatory approach is considered.

Another issue about which you will be hearing more is that of the use of heroin in the treatment of cancer patients. Both Subcommittee Chairman Henry Waxman and ranking Republican Ed Madigan have sponsored legislation to allow such treatment.

A summary of our agenda would not be complete without mention of the possibility that there will be at-

tempts at further cuts in the entitlements programs, such as Medicaid. I expect that any such proposal would be met with a great deal of opposition by the more liberal House members, but this should not automatically preclude us from considering needed changes.

Curiously, due to the structure of the Health Subcommittee, one of the most major debates we will face in coming months is the Clean Air Act.

In the House, the Health Subcommittee also handles environmental matters, such as clean air and safe drinking water. The Clean Air reauthorization promises a heated debate; in fact, that debate has already started. And, while the clean air law certainly has a bearing on health, it is not strictly a health issue. Nevertheless, you will see a good deal of our subcommittee's energies devoted to this issue the rest of the year and part of next year.

We share jurisdiction with other committees on some of the drug-related issues, and I expect you might see some joint proceedings in this area. The issues of drug lag and patent restoration immediately come to mind. The House Judiciary Committee has been considering a bill I co-sponsored to restore patent life for drugs in view of the delays that manufacturers encounter in securing FDA approval. This is closely related to the drug approval issue, which is of great interest to many members of the Science Committee.

In closing, let me reiterate my sincere hope that you will continue to provide your legislators with your good advice in the months to come. Never have we faced so critical a juncture in our efforts to make sense of the tangled bureaucracy. Our success so far is largely attributable to your help. I hope we can continue to work together.

What do you consider the major health issues facing North Carolinians today, and how do you propose to deal with them?

I believe the major health issues facing North Carolina are basically the same as those affecting the entire nation. High quality and availability of health care are no longer the problems they were at one time. Government programs have basically assured all Americans of the availability of health care. Standards of the involved professional groups generally have made sure the quality is high. Therefore, it seems that cost is the biggest challenge facing the health field today. Inflation has hit everyone hard, but the health providers have been hit especially hard. Last year our country spent over \$250 billion on health care, 9.4% of our gross national product. Forty years ago, health care expenditures represented only four percent of the GNP, or four billion dollars. The increased spending is due to many reasons other than inflation: more government spending, overuse of institutional care, increased benefits, more government programs, increased and more costly technology, expensive and often unnecessary government regulations, and the desire of many Americans for more and better health care.

Meeting the challenges in the health field involves the very best minds in the affected professions and those in government. Less regulation from Washington and Raleigh is one answer to solving the challenges in the health field. Competition is another possibility. Changes in medicaid, medicare and private insurance are other areas which need careful study.

Cutbacks in federal funding and fewer federal regulations necessitate state governments' taking a more active role in health care. What do you anticipate will happen in North Carolina in the near future with regards to regulations and funding?

I have been in the forefront of those in the Congress who have

been advocating a smaller federal role in the health field. Obviously, health should be a concern of all levels of government; however, certain aspects can best be handled by state and local authorities with minimal federal interference.

We have made a start in the health planning area by turning over more authority to the states and local governments. Hopefully, North Carolina's state and local governments will have the resources to meet this challenge.

Block grants are another area of importance to the health field. The administration's plans in this area met stiff resistance in the Congress and from some of the affected special groups. As a result, we adopted four health block grants, three of them true state block grants. These are the maternal and child health block grant, the health prevention block grant, and the alcohol, drug abuse and mental health block grant. The fourth is called "Primary Care" and it is basically comprised of what were previously known as the migrant and community health centers programs. The Reagan administration wanted two block grants with far fewer strings and federal regulations. It is important to note that we have made genuine progress in this area, but much remains to be done.

How well states accept the challenges will determine if we make further progress in the block grant concept.

Regarding future funding, I believe it would be unrealistic to expect new federal dollars for any non-defense programs. That makes it more imperative that we do a better job with what we have available. The administration's number one concern of reducing inflation and regulations can help considerably at getting costs down.

The increase of automobile, professional and product liability suits has initiated great concern. What, if any, legal reforms in this area might you consider?

I was actively involved in the

passage of the "Product Liability Risk Retention Act of 1981," which was signed by the President on September 25. It will allow product manufacturers, sellers, distributors, to purchase product liability insurance on a group basis or through insurance cooperatives known as product liability risk retention groups that may be chartered in any state.

Professional liability is clearly an area which needs our attention and action, and I will continue to work with the AMA and other groups to develop workable alternatives.

Do you favor pro-competition legislation, such as the Gephardt bill, which purports to stimulate competition in the health care delivery system?

I am not prepared to take a position on the Gephardt "competition" bill.

The Reagan administration has given this entire field a very high priority, and it has a top notch task force which has been studying this problem for several months. I have talked with Secretary Schweiker and others about this issue, and I feel it would be premature to endorse a specific bill at this point.

Congress must be very careful not to impose more regulation or central planning into any "new" system. We must create an environment that will give consumers an incentive to be cost-conscious when selecting health insurance. This, in turn, will give the providers reason to be as efficient and as effective as humanly possible.

This is basically unexplored territory, and we will need the guidance of those "in the field."

Explain your position on the Human Life Amendment. What are its implications with regards to physicians, birth control, the individual's right to privacy?

I have serious reservations about the wisdom of passing a Human Life Amendment. Such an amendment is far too rigid. I feel that, in the cases of incest and rape and when the

mother's health is in danger, the alternative of abortion should be available under the advice and care of licensed physicians.

There are also many unresolved

legal issues associated with such an amendment to the Constitution. It is unclear how the amendment would affect other birth control devices. Frankly, the Human Life Amend-

ment has received little attention or interest in the House, so I have not studied all the ramifications. It appears that legal and medical experts have differing opinions.

The rules laid down by Sir Isaac Newton, for the cultivation of natural philosophy, do not apply to the science of medicine, though often quoted with this view, viz. that similar effects proceed from the same or similar causes; and that we ought to admit of no other causes of natural effects, but such as are true, and sufficient to account for the phenomena.

With regard to the first rule, that similar effects proceed from the same or similar causes, it is only sufficient to examine the causes of any one disease, to show that it will not apply to medicine. Thus, the asthma arises from impure and smoky air, from a cold and foggy atmosphere, from the vapours of lead or arsenic, from frequent catarrhal attacks, from water in the chest, aneurisms, and other organic diseases. If, therefore, in every case of asthma, we inferred that its causes were the same, we should be much mistaken. The same thing may be said of all other diseases.

With regard to the second rule, that we ought to admit of no other causes, than such as are true and sufficient to explain the phenomena: the first part of the rule is gratuitous; a cause must be true, otherwise it is no cause at all. With regard to the second, the sufficiency of a cause to explain the phenomena, it wants precision, leaves too much to the mind, and opens an avenue to hypothesis. All the vagaries of medical theory, like the absurdities once advanced to explain the nature of gravitation, from the time of Hippocrates down to Broussais, have been believed to be sufficient to explain the phenomena, yet they have all proved unsatisfactory. Therefore, as the sufficiency of a cause to explain the phenomena depends upon the fancy of the interpreter, it is idle to take it as a test of its truth. — *Elements of the Theory and Practice of Physic*, by George Gregory, M.D., with notes and additions, adapted to the Practice of the United States, by Nathaniel Potter, M.D., and S. Colhoun, M.D., Vol. I, Philadelphia, Towar & Hogan, 1829.

Toxic Encounters of the Dangerous Kind

CHILDHOOD LEAD POISONING — NORTH CAROLINA STYLE

For those of you who believe that childhood lead poisoning only occurs among lower socioeconomic children who live in Northern industrial cities or on recertification examinations, the following statement is presented by Dr. Jimmie Rhyne, head of the Maternal and Child Health Branch and chairman of the Lead Screening Advisory Committee of the North Carolina Division of Health Services: Increased lead absorption in children is an insufficiently appreciated problem in North Carolina and practitioners in this state should be made aware of this issue.

Lead poisoning and increased lead absorption does occur in young children in North Carolina. Frequency and incidence seem to vary according to the degree of awareness, suspicion and curiosity of health care providers. Probe screening and surveillance of children tested through Early Periodic Screening Diagnosis and Treatment (EPSDT) programs, have disclosed a blood lead level of 30 $\mu\text{g}/\text{dl}$ or greater in 1% to 3% of children.

The sources of lead in our environment seem to be ubiquitous; lead-based paint is particularly well known. With a large number of older homes being renovated or converted to multiple dwellings, we should all be aware that increased lead absorption enters the atmosphere when paint is flaking or scraped. Young children playing in and around the home will then be overly exposed.

In North Carolina we have found the dust in homes of battery workers contains excessive lead. It is, therefore, important

to know the occupation of parents and other members of the household if increased lead absorption or lead poisoning is found or suspected in children. Burning of battery casings for heating homes or starting fires also liberates lead into the atmosphere so that lead absorption may be increased in children in those households.

Epidemiological studies suggest that even low levels of lead may interfere with neurologic functions and have a later effect on the school performance of children. Because there are multiple lead sources in North Carolina, we must continue our surveillance of young children for lead exposure and increased lead absorption.

A screening test for the identification of patients with increased lead absorption is available in North Carolina. This test, the free erythrocyte protoporphyrin (FEP or EP) test should be given to young children eligible for screening through EPSDT and those non-EPSDT children whose private physician feels they are at risk. Materials for such testing may be obtained through local health departments. Physicians can also obtain blood lead levels on those patients with screening tests that are positive or on patients suspected of having lead poisoning. For further information on lead screening, you may write Dr. Rhyne at P.O. Box 2091, Raleigh, or call him at 919-733-7791.

RONALD B. MACK, M.D.

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Childhood Accidents and Poisoning
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Editorials

DYSMORPHOPHOBIA¹

Use a word three times and it is yours. So it was when yesterday's newspapers encouraged the building of a bigger and better vocabulary. Today's words are cellulite and dysmorphophobia.

Cellulite refers to those unsightly lumps of fat particularly prominent in the thighs of corpulent matrons and so threatening to self-esteem. In the weight control and reduction business, these disturbing nodosities are targets for concerted effort, often financially rewarding for the attackers. There was no evidence to support the existence of a clinical entity called cellulite. Cellulitis is another matter, afflicting the fat and the lean, the just and the unjust.

Dysmorphophobia. Hatred of and dissatisfaction with one's physical form. Often a stimulus to do something about it, appropriately or inappropriately.

We also might add *congruent* but those of us who took geometry will recall that congruent triangles are alike, are in harmony. So when awareness of cellulite, floppy ears, sagging face and neck, an overly definitive nose provokes distress, body and mind are not congruent. The result is dysmorphophobia.

Response to the many stimuli which provoke this disturbing state takes varied forms. If a person imagines herself too fat, no matter that she may have classical Greek proportions, anorexia nervosa may result. When the desire for modification of the morphological self becomes so intense that mutilation, personal or surgical, results, a substrate for the Munchausen syndrome may be present. A state of perverted narcissism has developed, often unremediable, particularly when the victim is unable to accept the inevitability of the processes of nature.

It might be protested that this suggests that narcissism may to some degree be normal. Perhaps it has to be which is the reason why the myth of Narcissus has endured in mind as well as in flower. Self-love has Biblical sanction too: "Love thy neighbor as thyself." Here the emphasis has usually been on the neighbor and not on the self, but without self-acceptance it is difficult to be affectionate. A dimly remembered line, from Pope perhaps, seems apt: "Self-love to urge and reason to restraint."

If reason is a less than popular feature of our times, it is still required to curb those misplaced motives and bizarre impulses which threaten our congruence. Fashion is really based on such themes; a state of chronic, mild dissatisfaction must be maintained if we are to be properly adorned. For attire is biologically essential for the perpetuation of the species and for the maintenance of congruence. It is almost as if designer's genes have dictated designer jeans.

J.H.F.

Reference

1. Crisp AH: Dysmorphophobia and the search for cosmetic surgery. *Br. Med J* 1981;282:1099-1100.

SEEK THEN PROFESSIONAL HELP

For a people brought up to be self-reliant, we Americans are peculiarly inclined to seek advice from almost anybody. We have hints from Heloise, Ann Landers, Abigail Van Buren, astrologers, palm readers, iridologists and others beyond number. Shelves in our book stores sag with their burden of self-help. Even organized medicine offers telephonic hot lines for people concerned about almost everything. If we are as healthy as our statistics indicate, we still seem to have an overwhelming need to be told what to do.

But when counseling columnists and perplexed pundits can't come up with the right answers, they fall back to a fixed position and urge the distraught and lovelorn to "seek professional help." It is sometimes difficult to know which professional should be sought. So many groups are willing to treat and claim to be professionals that the seeker after advice, the consumer, must often be hard put to choose. The dictionary doesn't help much. One who professes, a professional, only avows that he, and increasingly she, has been called to a particular field. Perhaps this is the reason those who offer advice about health are lumped as health professionals.

Most doctors of medicine, practitioners of allopathy, conventional medicine, prefer to be splitters, not lumpers, so we separate ourselves on historic, scientific and educational grounds from other health practitioners and seek to establish and maintain strict standards of practice. Without doing so, we could hardly assert that we are truly professionals.

In our competitive and democratic world, others are just as free as we to assert that they too are professionals. For example, among the more than 200 attendants at the Southeastern Health Planning Conference, held August 9-13, 1981, in Panama City, Florida, was the Director of Planning of the American Chiropractic Association. Then there is the Health Sciences Consortium, a body of 24 traditional medical schools, three colleges of osteopathy, six pharmaceutical houses and three other medical groups, which has recently welcomed the Missouri College of Naturopathic Physicians to membership. Members of the consortium share "access to instructional design staff" and "to programs being developed at other schools" and can purchase such programs more cheaply than non-members.

Most of the time it is obvious that the professional

trusted to relieve anguish is a psychiatrist or psychologist. Yet there appear to be real problems in determining how effective psychotherapy really is, whether offered by a knowing columnist or in a face-to-face encounter with a professional. In the winter of 1980, the Senate Finance Committee sought professional help to determine the effectiveness of psychotherapy before considering broadening eligibility for payment for such services under Medicare. So a \$3.4 million clinical trial comparing drugs in two psychotherapeutic systems has been initiated by the National Institute of Mental Health.

Such a study is bound to be controversial. A depressed patient is unlike one with pneumonia because bouts with a pneumococcus are usually brief and without lasting affect if the proper antibiotic is administered. But we must deal with our psyches all our

lives. How can substantial conclusions be drawn under such circumstances?

Too much is probably expected of psychotherapy given the processing of human experience, the stream of consciousness and unconsciousness. We are unable to classify emotional problems accurately and to know what contributes to the true therapeutic personality. Certainly a therapist's training or the theory adhered to seems to have little influence, while excessive expectation on the part of the seeker may further complicate matters.

Psychotherapy has been and is still being practiced effectively by witch doctors, shamans and ministers whose practices are not studied and who do not qualify to receive payment from Medicare anyway. Even when the medical necessity for psychotherapy is apparent, it cannot be said that professional help is always helpful.

J.H.F.



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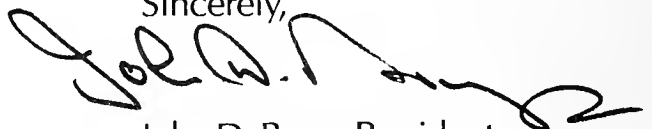
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WARNINGS: Anaphylactoid reactions have occurred in patients hypersensitive to aspirin (see CONTRAINDICATIONS). Peptic ulceration and gastrointestinal bleeding, sometimes severe, have been reported. Peptic ulceration and gastrointestinal bleeding can end in perforation, or gastrointestinal bleeding can end in hemorrhage, however, an association has not been established. Rufen should be given under close supervision to patients with a history of upper gastrointestinal tract disease and only after consulting the ADVERSE REACTIONS section.

In patients with active peptic ulcer and active rheumatoid arthritis, nonulcerogenic drugs, such as aspirin, should be attempted. If Rufen must be given, the patient should be under close supervision for signs of perforation or gastrointestinal bleeding.

PRECAUTIONS: Blurred and/or diminished vision, scotomata, and/or changes in color vision have been reported. If developed, discontinue Rufen and admit for an ophthalmologic examination.

Fluid retention and edema have been associated with Rufen; caution should be used in patients with a history of cardiac decompensation.

Rufen can inhibit platelet aggregation and prolong bleeding time. Use with caution in patients with intestinal coagulation defects and those taking anticoagulants.

Patients should report signs or symptoms of gastrointestinal ulceration or bleeding, blurred vision or eye symptoms, skin rash, weight gain or edema.

To avoid exacerbation of disease or adrenal insufficiency, patients on prolonged corticosteroid therapy should be tapered slowly when adding Rufen.

DRUG INTERACTION: Coumarin-type anticoagulants. The physician should be cautious when administering Rufen to patients on anticoagulants.

Aspirin. Concomitant use may decrease Rufen levels.

PREGNANCY AND NURSING MOTHERS: Rufen should not be taken during pregnancy nor by nursing mothers.

ADVERSE REACTIONS

Incidence greater than 1%

Gastrointestinal: The most frequent adverse reaction is gastrointestinal (4% to 16%). Includes nausea, epigastric pain, heartburn, diarrhea, abdominal distention, nausea and vomiting, indigestion, constipation, abdominal cramps or pain, fullness of GI tract (bloating, flatulence). **Central Nervous System:** dizziness, headache, nervousness. **Dermatologic:** rash (including maculopapular type), pruritus. **Special Senses:** tinnitus. **Metabolic:** decreased appetite, edema, fluid retention. Fluid retention generally responds promptly to discontinuation (see PRECAUTIONS).

*Incidence 3% to 9%.

Incidence less than 1 in 100

Gastrointestinal: gastric or duodenal ulcer with bleeding and/or perforation, hemorrhage, melena. **Central Nervous System:** depression, insomnia. **Dermatologic:** vesiculobullous eruptions, urticaria, erythema multiforme. **Special Senses:** amblyopia (see PRECAUTIONS). **Hematologic:** leukopenia, decreased hemoglobin and hematocrit. **Cardiovascular:** congestive heart failure in patients with marginal cardiac function, elevated blood pressure.

Causal relationship unknown

Gastrointestinal: Hepatitis, jaundice, abnormal liver function. **Central Nervous System:** paresthesias, hallucinations, dream abnormalities. **Dermatologic:** eczema, Stevens-Johnson syndrome. **Special Senses:** conjunctivitis, diplopia, optic neuritis. **Hematologic:** hemolytic anemia, thrombocytopenia, granulocytopenia, bleeding episodes. **Allergic:** fever, serum sickness, lupus erythematosus syndrome. **Endocrine:** glycosuria, hypoglycemia. **Cardiovascular:** arrhythmia (sinus tachycardia, bradycardia, and palpitations). **Renal:** decreased creatinine clearance, polyuria, hematuria.

OVERDOSAGE: Acute overdosage, the stomach should be emptied. Rufen is acidic and excreted in the urine; alkaline diuresis may benefit.

DOSAGE AND ADMINISTRATION: Rheumatoid arthritis and osteoarthritis, including flareups of chronic disease: Suggested dosage 400 mg t.i.d. or q.i.d.

Mild to moderate pain: 400 mg every 4 to 6 hours as necessary for relief of pain. Do not exceed 2,400 mg per day.

CAUTION: Federal law prohibits dispensing without prescription.

Boots Pharmaceuticals, Inc.
Shreveport, Louisiana 71106

NC - AMA

Delegates' Report

This report highlights the key issues considered at the Interim Meeting of the AMA House of Delegates held in Las Vegas, December 6-9, 1981.

The meeting opened with 282 delegates. Six new national specialty societies were added, bringing to 61 the number of groups represented in the House. The new societies are:

American Association of Clinical Urologists
American College of Nuclear Physicians
American Orthopaedic Association
American Society of Gastrointestinal Endoscopy
American Society of Therapeutic Radiologists
Association of Life Insurance Medical Directors of America

There may be as many as 20 additional delegates representing state medical associations in 1982. This is the result of AMA membership increases and local bylaw revisions affecting the membership status of residents and medical students.

SCIENTIFIC REPORTS

The AMA Council on Scientific Affairs submitted several reports on issues of general interest to physicians and the public.

One report calls for improved care for homosexuals. It concludes that non-judgmental recognition of sexual orientation enhances the physician's ability to render optimal patient care in health as well as in illness.

Other scientific reports:

- Establish guidelines for estrogen replacement in menopausal women
- Considered the causative factors contributing to depression especially among women
- Discussed the progress in DMSO research

HEALTH CARE COALITIONS

The House endorsed a statement by six national organizations encouraging the development of voluntary health care coalitions. The statement urges local

coalitions to analyze resources and establish projects to seek solutions to health care problems.

We believe that this action will have significant implications for the medical profession. These coalitions represent a continuation of the AMA corporate liaison activity begun three years ago. Other participating organizations are:

American Hospital Association
Blue Cross and Blue Shield Associations
Business Roundtable
Health Insurance Association of America
AFL-CIO

COMPETITION LEGISLATION

The House received two comprehensive reports on congressional and administrative activities regarding "pro-competition/consumer choice" proposals. In adopting the reports, AMA's strong concern that such legislation must be monitored carefully was renewed.

The AMA objective is to preserve accessibility of high quality health care delivery. The House directed the AMA Board and Councils to act to assure the strengths of the existing system of free enterprise medicine.

GUIDELINES FOR VOLUNTARY PEER REVIEW

Medicine's continuing commitment to the development and maintenance of voluntary, professionally-directed peer review was reaffirmed. In a related action, the House adopted a set of principles for voluntary peer review.

These principles should be the foundation of any peer review organization system. The objective is to assure the quality and appropriateness of medical care services. (The principles are listed following this report.)

CME ACCREDITATION

The House of Delegates adopted tighter standards for accrediting continuing medical education. Final approval was withheld until the handbook to be used to implement these standards is examined.

This handbook will be used to evaluate national organizations, medical societies, academic centers, and hospitals that offer CME programs.

In order to receive accreditation, a CME program sponsor must offer instruction in recognized medical subjects that appear in medical curricula.

MEDICAL CONSEQUENCES OF NUCLEAR WAR

The House of Delegates adopted a Board report recommending that the AMA inform the President and Congress of the medical consequences of nuclear war. The action also directed the AMA to educate physicians and the public on the issue.

In addition, the AMA will cooperate with other health care organizations and responsible authorities on medical matters in the event of national emergencies. While the Board and the delegates are concerned about the medical consequences of nuclear war, the action precludes the AMA from involvement in national defense issues outside its professional expertise.

In other actions, the AMA House:

- Endorsed model legislation to ban the manufacture, sale and distribution of "look alike" drugs
- Opposed proficiency testing programs by the Secretary of Health and Human Services to determine the qualifications of clinical laboratory and other health care personnel
- Called for continued monitoring of federal regulations affecting the practice of nuclear medicine
- Supported legislation to delete the three-day prior hospitalization requirement for providing extended care facility benefits under Medicare
- Opposed federal intervention in physicians' prescribing practices
- Encouraged further scientific studies on the effect of acid rain
- Supported adequate funding of biomedical, behavioral, and clinical research activities
- Adopted a policy emphasizing the right of hospitalized patients to choose their own physicians
- Requested further study of the issue of competition between hospitals and physicians

The members of your delegation welcome your questions and comments at all times. We strongly believe that the AMA merits your continued support. We respectfully urge those who are not members to join the rest of us and participate in the highly important work of this federation.

1981 DELEGATES

David G. Welton, M.D., Chairman
John Glasson, M.D.
Louis deS. Shaffner, M.D.
James E. Davis, M.D.
Frank R. Reynolds, M.D.

1982 DELEGATES

John Glasson, M.D., Chairman
Louis deS. Shaffner, M.D.
James E. Davis, M.D.
Frank R. Reynolds, M.D.
Jesse Caldwell, Jr., M.D.

PRINCIPLES FOR VOLUNTARY MEDICAL PEER REVIEW

1. Medical peer review is an organized effort to evaluate and analyze medical care services delivered to patients and to assure the quality and appropriateness of these services. Peer review exists to maintain and improve the quality of medical care.
2. Medical peer review is a local process.
3. Physicians are ultimately responsible for all peer review of medical care.
4. Physicians involved in peer review should be representatives of the medical community; participation must be structured to maximize the involvement of the medical community. Any peer review process must provide for consideration of the views of individual physicians, groups of physicians, or institutions under review.
5. Peer review evaluations are based on appropriateness, medical necessity, and efficiency of services to assure quality medical care.
6. Any system of medical peer review must have established procedures.
7. Peer review of medical practice and the patterns of medical practice of individual physicians, groups of physicians, and physicians within institutions is an ongoing process of assessment and evaluation.
8. Peer review is an educational process for physicians to assure quality medical services.
9. Any peer review process must protect the confidentiality of medical information obtained and used in conducting peer review.

Bulletin Board

What? When? Where?

Please note: 1. The Continuing Medical Education Programs at Bowman Gray, Duke, East Carolina and UNC Schools of Medicine, Dorothea Dix, and Burroughs Wellcome Company are accredited by the American Medical Association. Therefore CME programs sponsored or cosponsored by these schools automatically qualify for AMA Category I credit toward the AMA's Physician Recognition Award, and for North Carolina Medical Society Category A credit. Where AAFP credit has been requested or obtained, this also is indicated. 2. The "place" and "sponsor" are indicated for a program only when these differ from the place and source to write "for information."

March 3-5

"Techniques in G.I. Radiology"

Place: Bowman Gray School of Medicine

Credit: 18 hours

Info: Emery C. Miller, M.D., Associate Dean for Continuing Education, Bowman Gray School of Medicine, 300 S. Hawthorne Road, Winston-Salem, NC 27103, 919-748-4450

March 10

"Current Clinical Problems in Family Practice"

Place: Pitt County Memorial Hospital Auditorium, Greenville

Fee: \$50

Credit: 7 hours, AAFP applied for

Info: F. M. Simmons Patterson, M.D., Assistant Dean for Continuing Medical Education, East Carolina University School of Medicine, Greenville, NC 27834

March 10-13

"Internal Medicine 1982"

Place: UNC-CH School of Medicine

Fee: \$200

Credit: 25 hours, AAFP applied for

Info: Betty Neilson, 231 MacNider Bldg., 202H, UNC-CH School of Medicine, Chapel Hill, NC 27514

April 2-3

"Frank R. Lock Symposium in Obstetrics & Gynecology"

Place: Bowman Gray School of Medicine

Fee: \$150

Credit: 10 hours, AAFP applied for

Info: Emery C. Miller, M.D., Associate Dean for Continuing Education, Bowman Gray School of Medicine, 300 S. Hawthorne Road, Winston-Salem, NC 27103, 919-748-4450

April 5-6

"Genetic Mechanisms in Chemical Carcinogenesis"

Place: Chapel Hill

Credit: 11½ hours

Info: Ms. Mimi Minkoff, Cancer Research Center, Box 30, MacNider Bldg., UNC-CH, Chapel Hill, NC 27514

April 5-7

"Options and Controversies in Coronary Disease"

Place: Pinehurst Hotel and Country Club

Fee: \$225

Credit: 18 hours, AAFP will be applied for

Info: Betty Neilson, 231 MacNider Bldg., 202H, UNC-CH School of Medicine, Chapel Hill, NC 27514

April 14

"Infectious Diseases Update 1982"

Place: Pitt County Memorial Hospital, Auditorium, Greenville

Fee: \$50

Credit: 6 hours, AAFP applied for

Info: F. M. Simmons Patterson, M.D., Assistant Dean for Continuing Medical Education, East Carolina University School of Medicine, Greenville, NC 27834

April 19-22

"Current Concepts in Diagnostic Imaging"

Place: Duke University Medical Center

Fee: \$400 (\$200 if in training)

Credit: 30 hours

Info: Donald R. Kirks, M.D., Program Director, Department of Radiology—Box 3834, Duke University Medical Center, Durham, NC 27710

April 23-24

"Practical Pediatrics"

Place: Bowman Gray School of Medicine

Fee: \$50

Credit: 9 hours, AAFP applied for

Info: Emery C. Miller, M.D., Associate Dean for Continuing Education, Bowman Gray School of Medicine, 300 S. Hawthorne Road, Winston-Salem, NC 27103, 919-748-4450

April 24-25

"7th Annual Radiology Update"

Place: Bowman Gray School of Medicine

Fee: \$75

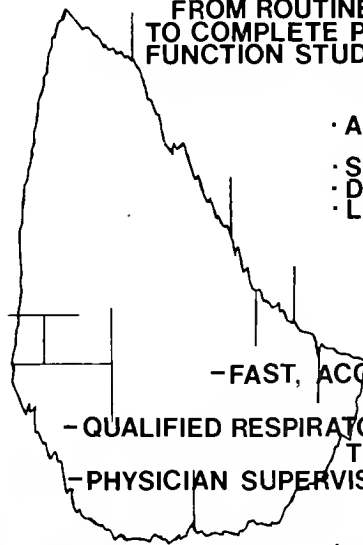
Credit: 9 hours

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May 21

"Pediatrics Day 1982"

Place: Pitt County Memorial Hospital Auditorium, Greenville

Fee: \$50

Credit: 6 hours, AAFP applied for

Info: F. M. Simmons Patterson, M.D., Assistant Dean for Continuing Medical Education, East Carolina University School of Medicine, Greenville, NC 27834

May 21-23

"Eleventh Annual Pediatric Pulmonary Disease Conference"

Place: Searle Center, Duke University Medical Center

Fee: \$50

Credit: 12 hours

Info: Alexander Spock, M.D., Box 2994, Duke University Medical Center, Durham, NC 27710, 919-681-3364

Out of State—Southeastern Region**March 22-25**

"Duke University Trauma Conference"

Place: Kiawah Island, South Carolina

Credit: 15 hours

Info: Joseph A. Moylan, M.D., Professor of Surgery, Chief, Trauma Service, Department of Surgery, Duke University Medical Center, Durham, NC 27710

March 30-April 2

"Recent Advances in Gastroenterology: Pathophysiology, Diagnosis and Treatment"

Place: Bethesda, Maryland

Info: Postgraduate Courses Department, American College of Physicians, 4200 Pine Street, Philadelphia, PA 19104

March 31-April 2

"Current Concepts of Clinical Infectious Diseases"

Place: Charlottesville, Virginia

Info: Postgraduate Courses Department, American College of Physicians, 4200 Pine Street, Philadelphia, PA 19104

March 31-April 2

"Internal Medicine-Advances and Review"

Place: Baltimore, Maryland

Info: Postgraduate Courses Department, American College of Physicians, 4200 Pine Street, Philadelphia, PA 19104

April 16-18

"EKG Interpretation and Arrhythmia Management"

Place: Williamsburg, Virginia

Fee: \$245

Credit: 13 hours, Category I; 13 hours, AAFP

Info: International Medical Education Corp., 64 Inverness Drive East, Englewood, Colo. 80112, 800-525-8651

April 22-24

"Pediatric Springfest"

Place: Williamsburg, Virginia

Info: Kathy E. Johnson, Box 48, MCV Station, Richmond, VA 23298, 804-786-0494

April 23-24

"Arrhythmia and Cardiac Ischemia: Diagnosis and Management"

Place: Atlanta, Georgia

Fee: \$245

Credit: 13 hours, Category I; 13 hours, AAFP

Info: International Medical Education Corp., 64 Inverness Drive, East, Englewood, Colo. 80112, 800-525-8651

May 5-8

"63rd Annual Meeting of the Virginia Society of Ophthalmology and Otolaryngology, Inc."

Place: Williamsburg, Virginia

Info: Donna Strawderman, 4205 Dover Road, Richmond, VA 23221, 804-353-2721

May 12-14

"Clinical Auscultation of the Heart"

Place: Georgetown University Medical Center, Washington, D.C.

Info: Extramural Programs Department, American College of Cardiology, 911 Old Georgetown Road, Bethesda, MD 20014

The items listed in the above column are for the three months immediately following the month of publication. Requests for listing should be received by "WHAT? WHEN? WHERE?", P.O. Box 27167, Raleigh, 27611, by the first of the month prior to the month in which they are to appear. A "Request for listing" form is available upon request.

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News Notes

**East Carolina University
School of Medicine**

Dr. Allen F. Bowyer, professor of medicine, attended the Fifth Annual Symposium on Computer Applications in Medical Care held in Washington, D.C. During the meeting, Bowyer presented "Information Theory Analysis of Left Ventricular Wall Motion for Determination of Diagnostic Discriminant Values."

Dr. Stephen C. Engelke, assistant professor of pediatrics, also attended the symposium and presented "Neonatal Information System Using an Interactive Microcomputer Data-Base Management Program."

Dr. John Bray, assistant professor of surgical research, co-authored two papers he recently presented

at the Estuarine Research Federation meeting held in Gleneden Beach, Oregon.

The papers are entitled "Trace Multi-Element Determination of Sea Water Using a Poly (Dithiocarbamate) Chelating Resin and Inductively Coupled Argon Plasma Emission Spectroscopy" and "Multi-Element Analysis of Cytosol Protein Fractions from *Rangia cuneata*."

During the meeting, Bray also presented a poster

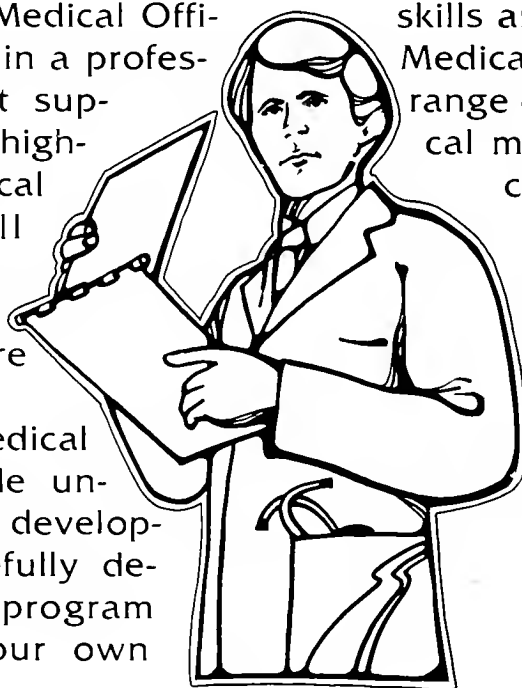
session on "Multi-Element Analysis of Metal-Binding Proteins in Cytosol Fractions."

Dr. James L. Mathis, professor and chairman, Department of Psychiatric Medicine, recently was a visiting professor at the University of Oklahoma Medical Center where he presented "Anorexia Nervosa." Mathis also presented "Pelvic Pain" to the Oklahoma City Medical Society.

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Dr. Theodore Kushnick, professor of pediatrics and director of the Developmental Evaluation Clinic, was a guest speaker at the March of Dimes Symposium on Mother and Newborn at Risk on Nov. 11 in Raleigh. Kushnick's topic of discussion was "The Prevention of Mental Retardation Before, During and After Pregnancy."

Dr. James L. Hughes has been appointed professor and coordinator of the postgraduate training program for the Department of Pediatrics. Hughes, a general pediatrician with special interest in growth and development, was previously commanding officer at the Naval Regional Medical Center at Camp Lejeune, N.C.

Hughes received his bachelor of science degree from Georgetown University and his medical degree from the University of Maryland.

Four members of the Department of Physiology have published papers appearing in the October issue of the *Proceedings of the Society for Experimental Biology and Medicine*.

Drs. S. Gregory Iams, associate professor, and John C. Yeager, assistant professor, co-authored "Isoproterenol-Induced Cardiac Failure in the Spontaneously Hypertensive Rat (41248)."

Drs. David L. Beckman, professor, and Daniel J.

Crittenden, research associate, co-authored "Protection from Oxygen-Induced Seizures by Clonazepam and Propylene Glycol."

Dr. Zubie Metcalf, director of the Center for Student Opportunities, has been named chairman of the editorial board for the quarterly publication published by the southern regional minority affairs section of the Association of American Medical Colleges. Metcalf has also been appointed to the executive committee of the minority affairs section.

Dr. Harold J. May has been appointed director of behavioral science at the medical school's Family Practice Center. May, a clinical and counseling psychologist, specializes in physician-patient relationships.

Prior to joining the medical school, May was a clinical psychology fellow at the Mayo Clinic in Rochester, Minn. He received his Ph.D. from the University of Georgia and his master's degree from the University of Alabama, Birmingham.

Dr. Irvin L. Blose, professor of psychiatric medicine, recently presented "Effect of Ethanol on Poly-

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Phenylephrine Hydrochloride	5mg.
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DOSAGE: Adults - One teaspoonfull every 3 to 4 hours. Children over 6 years - 1/2 Adult dose. Not recommended for children under 6 without very close supervision by physician.

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Cyclapen[®]-W is just as effective in otitis media and streptococcal tonsillopharyngitis†.²

Cyclapen[®]-W produces a significantly lower incidence of the most common side effect, diarrhea.²

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Rapid onset of action with fewer side effects.

*Rapidly excreted unchanged in urine. Clinical efficacy may not always correlate with blood levels.

†Due to susceptible organisms.

1. Ginsburg CM, McCracken GH Jr, Zweighaft TC, Clahsen JC: Comparative pharmacokinetics of cyclacillin and amoxicillin in infants and children. *Antimicrob Ag Chemother* 19:1086-1088 (June) 1981.

2. Multicenter trials. Data to be published.

See important information on page after next.

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Clinical efficacy may not always correlate with blood levels.

†Due to susceptible organisms.

3. Data on file, Wyeth Laboratories.
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Indications

Cyclacillin has less *in vitro* activity than other drugs in the ampicillin class and its use should be confined to these indications: Treatment of the following infections:

RESPIRATORY TRACT

Tonsillitis and pharyngitis caused by Group A beta-hemolytic streptococci

Branchitis and pneumonia caused by *S. pneumoniae* (formerly *D. pneumoniae*)

Otitis media caused by *S. pneumoniae* (formerly *D. pneumoniae*) and *H. influenzae*

Acute exacerbation of chronic bronchitis caused by *H. influenzae**

*Though clinical improvement has been shown, bacteriologic cures cannot be expected in all patients with chronic respiratory disease due to *H. influenzae*.

SKIN AND SKIN STRUCTURES (integumentary) infections caused by Group A beta-hemolytic streptococci and staphylococci, non-penicillinase producers.

URINARY TRACT INFECTIONS caused by *E. coli* and *P. mirabilis*. (This drug should not be used in any *E. coli* and *P. mirabilis* infections other than urinary tract.)

NOTE: Perform cultures and susceptibility tests initially and during treatment to monitor effectiveness of therapy and susceptibility of bacteria. Therapy may be instituted prior to results of sensitivity testing.

Contraindications: Contraindicated in individuals with history of an allergic reaction to penicillins.

Warnings: Cyclacillin should only be prescribed for the indications listed herein.

Cyclacillin has less *in vitro* activity than other drugs of the ampicillin class. However, clinical trials demonstrated it is efficacious for recommended indications.

Serious and occasional fatal hypersensitivity (anaphylactoid) reactions have been reported in patients on penicillin. Although anaphylaxis is more frequent following parenteral use, it has occurred in patients on oral penicillins. These reactions are more apt to occur in individuals with history of sensitivity to multiple allergens. There are reports of patients with history of penicillin hypersensitivity reactions who experienced severe hypersensitivity reactions when treated with a cephalosporin. Before penicillin therapy, carefully inquire about previous hypersensitivity reactions to penicillins, cephalosporins and other allergens. If allergic reaction occurs, discontinue drug and initiate appropriate therapy. Serious anaphylactoid reactions require immediate emergency treatment with epinephrine. Oxygen, I.V. steroids, airway management, including intubation, should also be administered as indicated.

Precautions: Prolonged use of antibiotics may promote overgrowth of nonsusceptible organisms. If superinfection occurs, take appropriate measures.

PREGNANCY: Pregnancy Category B. Reproduction studies performed in mice and rats at doses up to 10 times the human dose revealed no evidence of impaired fertility or harm to the fetus due to cyclacillin. There are, however, no adequate and well-controlled studies in pregnant women. Because animal reproduction studies are not always predictive of human response, use this drug during pregnancy only if clearly needed.

NURSING MOTHERS: It is not known whether this drug is excreted in human milk. Because many drugs are, exercise caution when cyclacillin is given to a nursing woman.

Adverse Reactions: Oral cyclacillin is generally well tolerated. As with other penicillins, untoward sensitivity reactions are likely, particularly in those who previously demonstrated penicillin hypersensitivity or with history of allergy, asthma, hay fever, or urticaria. Adverse reactions reported with cyclacillin: diarrhea (in approximately 1 out of 20 patients treated), nausea and vomiting (in approximately 1 in 50), and skin rash (in approximately 1 in 60). Isolated instances of headache, dizziness, abdominal pain, vaginitis, and urticaria have been reported. (See WARNINGS) Other less frequent adverse reactions which may occur and are reported with other penicillins are anemia, thrombocytopenia, thrombocytopenic purpura, leukopenia, neutropenia and eosinophilia. These reactions are usually reversible on discontinuation of therapy.

As with other semisynthetic penicillins, SGOT elevations have been reported.

As with antibiotic therapy generally, continue treatment at least 48 to 72 hours after patient becomes asymptomatic or until bacterial eradication is evidenced. In Group A beta-hemolytic streptococcal infections, at least 10 days' treatment is recommended to guard against risk of rheumatic fever or glomerulonephritis. In chronic urinary tract infection, frequent bacteriologic and clinical appraisal is necessary during therapy and possibly for several months after. Persistent infection may require treatment for several weeks.

Cyclacillin is not indicated in children under 2 months of age.

Patients with Renal Failure: Cyclacillin may be safely administered to patients with reduced renal function. Due to prolonged serum half-life, patients with various degrees of renal impairment may require change in dosage level (see DOSAGE AND ADMINISTRATION in package insert).

Dosage (Give in equally spaced doses)

INFECTION	ADULTS	CHILDREN*
Respiratory Tract		
Tonsillitis & Pharyngitis	250 mg q.i.d.	body weight < 20 kg (44 lbs) 125 mg q.i.d. body weight > 20 kg (44 lbs) 250 mg q.i.d.
Branchitis and Pneumonia		
Mild or Moderate Infections	250 mg q.i.d.	50 mg/kg/day q.i.d.
Chronic Infections	500 mg q.i.d.	100 mg/kg/day q.i.d.
Otitis Media	250 mg to 500 mg q.i.d.†	50 to 100 mg/kg/day†
Skin & Skin Structures	250 mg to 500 mg q.i.d.†	50 to 100 mg/kg/day†
Urinary Tract	500 mg q.i.d.	100 mg/kg/day

*Dosage should not result in a dose higher than that for adults.

†depending on severity

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ribosome Disaggregation: Relationship to Ethanol-Induced Brain Damage" at the Center for Alcohol Studies, UNC-Chapel Hill.

Dr. A. Dewane Frutiger, associate director of the Developmental Evaluation Clinic, has received the Milton H. Erickson Award for Scientific Excellence for "Treatment of Penetration Phobia Through the Combined Use of Systematic Desensitization and Hypnosis: A Case Study." The award was presented by the American Society of Clinical Hypnosis. The article appears in the October issue of *The American Journal of Clinical Hypnosis*.

Dr. David M. Baughan has been appointed assistant professor of family medicine. Prior to joining the medical school, Baughan was a family medicine staff physician with the Group Health Cooperative of Puget Sound in Seattle, Wash. Baughan also completed residency training at the Group Health Cooperative.

He received his undergraduate degree from Harvard College and his medical degree from West Virginia University in Morgantown. Before attending medical school Baughan served as outreach director for the Southern West Virginia Regional Health Council, Inc.

Two Greenville physicians have joined the Department of Pathology and Laboratory Medicine as full-time faculty.

Dr. H. Kim Park has been named associate professor and director of the hematology section and co-director of the surgical pathology section. Park received her postgraduate clinical pathology training at the University of Kansas Medical Center and Moses H. Cone Hospital in Greensboro. She received her medical degree from Ewha University in Seoul, Korea.

Dr. Ernest W. Larkin III also has been appointed associate professor of pathology and laboratory medicine. He will be director of the blood bank and co-director of the surgical pathology section. Larkin received his postgraduate training and his medical degree from the Medical College of Virginia.

Dr. Sudesh Kataria, assistant professor of pediatrics, recently presented a workshop on "Recognizing Childhood Illnesses" during a health and nutrition symposium sponsored by the N.C. Department of Human Resources held in Elizabeth City.

Dr. S. Jamal Mustafa, associate professor of pharmacology, co-authored a paper appearing in the July-August issue of *Basic Research in Cardiology*. The paper is entitled "Effect of Adenosine on the Relaxation of Coronary Arteries at Varying pH Values."

R. Stephen Porter, Pharm. D., Department of Family Medicine, presented a paper entitled "Considerations in the Use of Non-Steroidal Anti-Inflammatory Agents" at the annual Carolina Hospital-Clinical Pharmacy Seminar in Raleigh.

The School of Medicine and Pitt County Memorial Hospital held a ribbon-cutting ceremony for the new west bed tower Nov. 22. The 140-bed addition, funded through state appropriations, will increase the hospital's bed size to 569 beds when it is fully occupied. The first patients were moved into the new facility on Thanksgiving Day.

University of N.C. Chapel Hill School of Medicine and Memorial Hospital

The Cancer Research Center at the School of Medicine has been awarded \$719,247 in a renewal of its support grant from the National Cancer Institute.

The award is part of a three-year renewal grant approved for the center and represents more than a doubling of funding from the previous year.

"This award was made after a very thorough and critical review by leading cancer researchers on the basis of the great promise of the Cancer Research Center at the School of Medicine at UNC-CH," said Dr. Stuart Bondurant, Dean of the School of Medicine. "The award is both a tribute to the substantial accomplishments of the past and an expression of confidence in the results of the work of the future."

Center director Dr. Joseph S. Pagano said, "The new funding will allow the center to expand and strengthen its clinical and basic science cancer research programs, particularly in the areas of cancer epidemiology, drug development and cancer cell biology."

The Cancer Research Center was established as one of a network of specialized cancer centers throughout the country when it was awarded a core support grant from the National Cancer Institute in 1975. The center, under the direction of Pagano, began with a faculty of 16 and has expanded to 48 faculty members based in departments in the schools of medicine, pharmacy and public health. More than 100 cancer scientists from the UNC-CH Health Sciences and institutions in Research Triangle Park also are affiliated with the center.

In 1984 cancer researchers expect to occupy a new research building on the UNC-CH campus, the Lineberger Cancer Research Center.

More than 90 students participated in three first aid

programs for babysitters held at North Carolina Memorial Hospital in October and November. The two-night course included discussions on fire safety, common injuries, illness in children and medical emergencies such as choking. Participants were given a chance to practice some of the techniques they learned and received a certificate after attending both sessions.

The babysitters first aid program was sponsored by Project Goodlife, a health enhancement program of N.C. Memorial Hospital and the UNC-CH School of Medicine.

A special instrument that allows deaf people to communicate by telephone recently was installed in the emergency room at North Carolina Memorial Hospital. Now any deaf person with a similar device

can call the hospital for emergency assistance or medical advice.

The instrument, called a teletypewriter, is connected to a telephone in the emergency room. When the phone rings, the emergency room secretary places the receiver in a cradle on the typewriter and types the word "hello." Immediately, "hello" is printed on the display screen of the caller's teletypewriter. Then the caller types his message, which can be read by nurses and physicians at the hospital. An entire conversation can be carried on between a deaf person and the hospital personnel, without a single word being spoken.

Walter Harris, emergency room administrator, noted that the typewriter is small and lightweight, so deaf persons can carry it with them. The typewriter can be attached to any telephone.

"We have no idea how many deaf people in the community might own one of these," said Linda

...the results of
...0 million worth of
...overnment-funded research
...hypertension
...orth reading about?



Briggs, emergency room nurse supervisor. "But those who do now have a way to get in touch with us whenever they need us."

The number for the emergency room's teletypewriter is 966-2453.

A leader in the study of blood clotting disorders for more than three decades, the University of North Carolina at Chapel Hill is expanding its study of thrombosis — the formation of blood clots.

The Center for Thrombosis and Hemostasis at UNC-CH has received a \$2.9 million Specialized Center of Research (SCOR) grant from the National Heart, Lung and Blood Institute. Dr. Harold R. Roberts, professor of medicine and pathology and director of the center, said the grant will be used over a five-year period to continue and expand studies on thrombosis.

"Diseases related to thrombosis are the leading cause of death," Roberts said. "The SCOR grant is a multidisciplinary grant which will enable us to build on what's already here and to expand the research on the center. A number of School of Medicine departments are involved, including pathology, medicine, biochemistry, pediatrics and surgery."

The American Cancer Society has renewed an Institutional Research Grant to the University of North Carolina at Chapel Hill. The \$55,000 awarded to UNC-CH is 22% higher than the previous year's award, according to Dr. Mary Ellen Jones, chairman and professor of biochemistry who chairs the Institution Research Grant.

The American Cancer Society makes funds available specifically to support innovative cancer research projects.

A third-year psychiatry resident at North Carolina Memorial Hospital has been selected as a Falk Fellow of the American Psychiatric Association.

Dr. Clifton R. Tennison, Jr. will work on a committee and attend meetings of the association for two years to observe how the association operates.

Tennison was one of 12 residents in the nation chosen by the Maurice Falk Fellowship Committee. About 55 residents were nominated for the honor.

This is the sixth consecutive year that a N.C. Memorial resident has been named a Falk Fellow.

Dr. Suzanne V. Sauter, a 1974 graduate of the School of Medicine, has been appointed medical director of the medical school's rehabilitation program office.

The appointment, effective Aug. 15, was announced by Dr. Stuart Bondurant, dean of the School of Medicine. Sauter, an assistant professor of rheumatology and immunology, had been acting medical

director of the rehabilitation program since March 1980.

"With the growing burdens of chronic illness among our people and especially among the elderly, it is more important than ever before that we emphasize the full array of medical, physical, psychological and social rehabilitative services," Bondurant said. "Dr. Suzanne Sauter is an expert in many aspects of rehabilitation and she is an accomplished leader of the rehabilitative team. I am confident that she will give strong leadership to this important program."

As medical director, Sauter will be responsible for overseeing the rehabilitation program which includes a 17-bed inpatient unit at North Carolina Memorial Hospital, outpatient clinics and participation in the state's network of rehabilitation centers. The multidisciplinary program includes educational and research activities in addition to clinical work with patients at N.C. Memorial.

Sauter received her undergraduate degree from Wellesley College in 1970. After receiving her medical degree here in 1974, she completed an internship at the University of Florida Teaching Hospitals and returned to Chapel Hill as an assistant resident in 1975.

She is director of the arthritis clinic at N.C. Memorial Hospital and serves as technical advisor to the state's Arthritis Act Advisory Committee. She also is a member of the board of directors of the North Carolina chapter of the Arthritis Foundation and a member of the committee on physical rehabilitation for the state's Division of Vocational Rehabilitation Services.

Sauter serves as a member of the committee on rehabilitation medicine of the North Carolina Medical Society. She is diplomate of the American Board of Internal Medicine in internal medicine and rheumatology.

The appointments of six faculty members in the School of Medicine have been announced by University Chancellor Christopher C. Fordham III.

They are: Dr. Stuart A. Bentley, associate professor of pathology; Dr. Jerjang Chang, assistant professor of pathology; Dr. Kent W. Davidson, assistant professor of family medicine; Dr. Alan K. Halperin, assistant professor of medicine; Dr. Donald L. Patrick, associate professor of social and administrative medicine; and Dr. Ronald I. Swanstrom, assistant professor of biochemistry and nutrition.

Bentley is a British citizen born in Kent. He received his M.B. and B.S. degrees in 1966 from the University of London. Since 1977, he has been an expert consultant at the National Institutes of Health in Bethesda, Md. Before that, he was registrar and then senior registrar at the Royal Postgraduate Medical School in London for six years.

From 1969-71, Bentley was a registrar in pathology at the Charing Cross Hospital. He practiced general medicine in London for a year before that. His appointment was effective Nov. 1.

Chang, whose appointment was effective Sept. 15, also has been named associate director of the division of laboratory animal medicine.

He was a clinical pathologist at Duke University Medical Center for five years before coming here. He also has been a consulting veterinarian at the Durham Veteran's Administration Medical Center and a pathologist at Emory University.

A native of Taiwan, Chang received his D.V.M. degree in 1964 from the National Taiwan University and his M.S. in 1968 and Ph.D. in 1971 from the University of Missouri.

Davidson, a native of Tennessee, comes to Chapel Hill from the University of Arkansas for Medical Sciences, where he was an assistant professor for a year. He was a resident there from 1976-79 and a fellow from 1979-80. His appointment was effective Oct. 10.

He received his B.S. degree in 1972 from Arkansas

State University and his M.D. degree in 1976 from the University of Arkansas for Medical Sciences.

Halperin was born in Chicago. He has been an assistant professor at the East Carolina University School of Medicine in Greenville since 1978. His appointment was effective Oct. 10.

Before his appointment at East Carolina, he was primary care physician for the National Health Service Corps for three years.

He received his B.A. degree in 1967 from the University of Michigan in Ann Arbor and his M.D. in 1971 from the University of Kansas.

Swanstrom, also from Chicago, will begin his appointment here on March 15.

He has been a postdoctoral fellow at the University of California at San Francisco since 1975. He was a teaching assistant at the University of California at Irvine from 1971-75.

1977, when
Veterans Administration
compared Step-2
regimens in 450 mild
hypertensive patients,
which regimen was
even most effective?



Swanstrom received his B.S. degree in 1971 and his Ph.D. in 1975 from the University of California at Irvine.

Dr. James R. Pick has been appointed a full professor in the School of Medicine's Department of Pathology.

Pick came to UNC-CH in 1965 as an instructor in comparative pathology and director of the Laboratory Animal Facility. His primary interest is the effect of alcohol consumption on animals.

He and Dr. Fred W. Ellis, professor of pharmacology, have conducted considerable research on fetal alcohol syndrome, a series of birth defects that can affect infants born to women who drink heavily.

Pick received his D.V.M. degree in 1961 from the University of Georgia and his certificate in laboratory animal medicine from Bowman Gray School of Medicine in 1973. He is a native of Baltimore, Md.

Dr. Morris A. Lipton, Sarah Graham Kenan distinguished professor of psychiatry and director of the Biological Sciences Research Center, was honored recently by the Academy of Psychosomatic Medicine.

The academy presented Lipton with its 1980-81 Best Journal Paper Award for an article titled "Psychotherapy of Depression in the Elderly." The paper appeared in the October 1980 issue of *Psychomatics*, the Journal of the Academy of Psychosomatic Medicine. Lipton received the award during the academy's annual meeting earlier this month.

Lipton, who joined the School of Medicine faculty in 1959, earned a Ph.D. degree in 1939 and an M.D. in 1948 from the universities of Wisconsin and Chicago, respectively.

Dr. Robert C. Cefalo, professor and chairman of obstetrics and gynecology, was guest speaker at the 1981 annual session of the Texas Medical Association May 28 in Dallas. His presentation was titled "Maternal Mortality and Toxemia."

Dr. Gordon B. Burnett, associate professor of psychiatry, and Dr. Daphne McKee, assistant professor of psychiatry, presented a paper titled "Psychological and Neuroendocrinological Functioning in Patients on Chronic Hemodialysis," at the NATO Symposium on Behavior Medicine June 30-July 3 in Porto Carras, Greece. Burnett and McKee were co-authors with Dr. David Raft, associate professor of psychiatry.

Marlys M. Mitchell, associate professor and director of occupational therapy, participated in the American Occupational Therapy Association's workshop on academic administration in occupational therapy July 30-Aug. 1 in Dallas.

Reiko Sakata, clinical assistant professor of surgery, and Rodger Dalston, surgery and dental ecology, presented a short course at the regional meeting of the American Speech, Hearing and Language Association July 25 in Philadelphia.

Gary Mesibov, assistant professor, TEACCH division, attended meetings of the Society of Pediatric Psychologists at the annual convention of the American Psychological Association.

Carolyn S. Schroeder, associate professor of psychiatry, presented a paper at the annual meeting of the American Psychological Association Aug. 24-28 in Los Angeles. She also was installed as president of Section I, Division 12, of Clinical Child Psychology.

Betty E. Cogswell, associate professor of family medicine, presented a paper titled "Access to Health Care: The Adolescent Female Patient" at the annual meeting of the Society for the Study of Social Problems Aug. 21-24 in Toronto.

J. Gregory Olley, clinical associate professor of psychiatry, participated as a trainer at a four-day conference for special educators, teachers, speech pathologists and other professionals serving autistic children. The conference was held by Southeastern Cooperative Educational Programs to promote comprehensive regional services for autistic individuals in the Tidewater Virginia area Aug. 24-27 in Norfolk.

W. Jackson Pledger, assistant professor of pharmacology and member of the Cancer Research Center, gave a seminar on the "Regulation of Cell Proliferation" at the Karolinska Institute Aug. 27 in Stockholm, Sweden. He also spoke at the 13th Acta Congress of Immunology Aug. 28 in Cambridge, England.

Dr. William G. Hollister, professor of psychiatry, delivered a series of lectures to faculty and residents of the Psychiatry Departments at the Universities of Mila and Pavia while a Fulbright Scholar in Italy.

Michael Topa, assistant professor of pathology and a member of the Cancer Research Center, presented a paper on "Accuracy of DNA Replication" at the Second European Molecular Biology Organization Meeting on Accuracy in Biological Processes Sept. 3 in Paris.

Eric Schopler, professor of psychiatry and director

of the TEACCH division, addressed professional groups on topics related to the treatment of autistic individuals. He presented the TEACCH model for treatment and education of autistic and other communication handicapped children to the Symposia on Individualized Program Planning for the Autistic Person sponsored by the Texas Research Institute of Mental Sciences. He also moderated a discussion titled "Living with Autistic Persons." He delivered an invited presentation to the annual convention of the International Council of Psychologists titled "Advances in the Treatment of Autistic Children and Families" Aug. 20-21 and 22-23 in Texas and California.

Susan Attermeier, of the Division for Disorders of Development and Learning, taught a course in pediatric physical therapy to staff members of the National Institute of Pediatrics in Mexico City Oct. 5-9.

Dr. Gordon F. Murray, professor of cardiothoracic surgery, was an invited guest speaker at the meeting of the South Carolina Lung Association at Kiawah Island, S.C., on Nov. 14. His presentation was entitled "Pulmonary Disease Secondary to Esophageal Motor Dysfunction in the Infant and Adult."

**Bowman Gray
School of Medicine
Wake Forest University**

Dr. Richard Janeway, dean of the Bowman Gray School of Medicine, has been elected chairman-elect of the Council of Deans of the Association of American Medical Colleges (AAMC).

He was elected during the 92nd annual meeting of the association in Washington, D.C. Janeway will be installed as chairman in November and will succeed

1979, when results were published
the five-year, 10,000-patient
Hypertension Detection and
Follow-up Program (HDFP study),
which Step-2 regimen was preferred
and was deemed effective
without significant adverse effects?²



Dr. William H. Luginbuhl, dean of the University of Vermont College of Medicine.

The council's membership consists of the deans of 126 American medical schools. Organized in 1876, the council is the oldest of five governing councils within the AAMC.

In his new office, Janeway will represent the deans on the AAMC's Executive Council, of which he has been a member for the past four years.

Dr. Gary B. Copeland of Fayetteville has become the 35th president of the Medical Alumni Association of the Bowman Gray School of Medicine. He was installed during the association's annual alumni dinner and succeeds Dr. Murphy F. Townsend Jr. of Greensboro.

Dr. Dixie L. B. Soo of Lima, Ohio, was elected president-elect of the association, and Miss Katherine Davis, assistant to the director of the Bowman Gray/Baptist Hospital Medical Center, was re-elected secretary.

Those elected to the alumni council included Dr. M. Robert Cooper, professor of medicine (hematology/oncology) at Bowman Gray; Dr. Campbell W. McMillan of Chapel Hill; Dr. Joseph B. Alexander of Lumberton; Dr. Vernon W. Taylor Jr. of Elkin; Dr. W. Claude Hollingsworth of Charlotte; and Dr. Jefferson Beale Jr. of Danville, Va.

The 20-member council serves in an advisory capacity to the president and other elected officers on affairs of the association.

One former Bowman Gray faculty member and two current members of the faculty were honored during the alumni dinner as Distinguished Alumni Lecturers. Receiving the awards were Dr. David M. Drylie, professor and chief of the Division of Urology at the University of Florida College of Medicine; Dr. John S. Kaufmann, associate professor of medicine and pharmacology at Bowman Gray; and Dr. John H. Edmonds, professor of medicine (cardiology) at Bowman Gray.

The association presented its Distinguished Service Award posthumously to Dr. Coy C. Carpenter, who served as dean of the medical school for 26 years.

The President's Award was presented to Dr. Townsend in appreciation for distinguished service in the performance of his duties while president of the association.

Dr. Raymond S. Garrison Jr. has been appointed to the Bowman Gray faculty as assistant professor of dentistry.

Garrison, a native of Belmont, is a graduate of Davidson College and holds the M.S. degree from the University of Maryland. He received the D.D.S. degree from the University of North Carolina School of Dentistry at Chapel Hill.

Prior to coming to Bowman Gray, Garrison was an

assistant professor and director of dental programs at the East Carolina University School of Medicine.

He will direct Bowman Gray's training program for residents in the Department of Dentistry.

As part of their homecoming activities, Wake Forest University students raised about \$8,000 to help support cancer research in Bowman Gray's Oncology Research Center.

The students' activities, coordinated by the school's Interfraternity Council, included a 110 mile run from the Duke University Medical Center to Wake Forest.

Money raised by such efforts was contributed to the Laura Elizabeth Scales Memorial Foundation. Proceeds from the foundation support cancer research. Miss Scales, who died of cancer in 1969, was the daughter of Dr. and Mrs. James Ralph Scales. Scales is president of Wake Forest University.

Dr. L. Andrew Koman, assistant professor of orthopedic surgery at Bowman Gray, has been named head of children's orthopedics at the Bowman Gray/Baptist Hospital Medical Center.

According to Dr. Anthony G. Gristina, professor and head of the medical center's Section on Orthopedic Surgery, Dr. Koman's appointment greatly expands and strengthens the range of services offered in orthopedic surgery.

"All of our orthopedic subsections are now headed by surgeons who are widely recognized in their fields," Gristina said.

Koman, who holds the A.B. and M.D. degrees from Duke University, took an internship in pediatrics before beginning residency training in surgery at the Duke Medical Center. He completed a fellowship in hand and microsurgery at Duke where he was a member of the microsurgical team for three years.

He also took training at Shriners Hospital for Crippled Children in Greenville, S.C., and as a Cerebral Palsy Fellow at the Lenox Baker Children's Hospital in Durham.

He was a winner of the North Carolina Orthopedic Association's Resident Award in 1979.

Dr. Joseph E. Johnson III, professor and chairman of the Department of Medicine at Bowman Gray, has been appointed to head a national study on geriatrics and medical education.

He was named chairman of the steering committee for the Regional Institute of Geriatrics and Medical Education, sponsored by the Association of American Medical Colleges.

The association will undertake a year-long effort to increase understanding on the part of medical schools and teaching hospitals of the impact of the aging population on medical education and the delivery of medical care.

Four regional invitational conferences are scheduled for the spring of 1982. The project also will include the development of performance characteristics and learning objectives which can be used in a variety of training settings to assist in educational efforts in geriatrics.

Johnson also was a national delegate to the 1981 White House Conference on Aging, which was held last fall.

Dr. Thomas B. Clarkson, professor and chairman of the Department of Comparative Medicine, has been elected chairman of the American Heart Association's Council on Arteriosclerosis.

He will serve a two-year term.

Clarkson, a veterinarian, is the first non-physician to hold the office. He was installed during the association's annual scientific meeting in Dallas, Texas.

Clarkson previously served as vice chairman of the council. He is director of the Specialized Center of Research (SCOR) on arteriosclerosis at the Bowman Gray School of Medicine, one of eight such programs in the nation.

Duke University Medical Center

Seven physicians and one former U.S. congressman were presented distinguished alumni awards by the Duke University Medical Alumni Association at a banquet Nov. 20.

Drs. Paul Allen Ebert, David Cayer and J. Graham Smith were honored as outstanding alumni.

Ebert received his medical degree from Ohio State University in 1958. He served as an assistant profes-

1980, when the
nt National Committee
Detection, Evaluation, and
atment of High Blood Pressure
olished their recommendations,
hich Step-2 regimen best met
eir criteria for effectiveness,
ety, simplicity of titration,
venience, and economy?³



sor of surgery at Duke from 1966-1968, and as an associate professor from 1968-1971. From 1971 to 1974, he was surgeon-in-chief at New York Hospital, and professor and chairman of surgery at Cornell University Medical College. Since 1975, he has been professor and chairman of surgery at the University of California Medical Center in San Francisco.

Cayer received his medical degree from Duke in 1938. He served in three different capacities in the medical school between 1941 and 1944: assistant in physiology and pharmacology, instructor of medicine, and research fellow in medicine. Subsequently, he served as assistant professor of medicine and professor of clinical medicine at Bowman Gray. Cayer is currently a specialist in gastroenterology, practicing in Winston-Salem. He is author or co-author of more than 100 publications.

Smith received his medical degree from Duke in 1951. He is professor and chairman of the Department

of Dermatology at the Medical College of Georgia in Augusta. He taught at Duke from 1960-1967. Smith is a member of numerous professional associations and has served as consultant to the National Institutes of Health, the U.S. Army and the Food and Drug Administration. He is presently serving on a national residency review committee for dermatology.

Dr. G. B. Hodge and Richardson Preyer were honored for distinguished service. Hodge completed his residency in surgery at Duke in 1947. He has served as vice president and president of the Davison Club and is a member of many medical organizations including the Deryl Hart Surgical Society. In 1971, the multiple-purpose building at the University of South Carolina in Spartanburg was named the Hodge Center in his honor. Since 1948, he has been in the private practice of general, thoracic and cardiovascular surgery.

Preyer received his bachelor's degree from Prince-

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\$100 million worth of clinical trials,
involving thousands of patients
who were followed for several years,
merit your serious consideration?



ton in 1941 and, after World War II service in the Navy, graduated from Harvard Law School in 1949. In 1961, President Kennedy appointed him federal judge of the Middle District Court, a position he resigned to run for governor of North Carolina in 1963. From 1968 to 1980, he represented the sixth district of North Carolina in the United States House of Representatives. In Congress, he served as a member of the House Committee on Interstate and Foreign Commerce, the Committee on Government Operations (he was chairman of the subcommittee on government information and individual rights), and the Committee on Standards of Official Conduct. He has long been active in community affairs and has received a number of honorary degrees, including an LL.D. from Duke in 1980.

Drs. E. Harvey Estes Jr., David C. Sabiston Jr. and Hans Lowenbach were honored for teaching.

Estes received his medical degree from the Emory

University School of Medicine in 1947. He began his career at Duke Hospital in 1953 and is currently Distinguished Service Professor and chairman of the Department of Community and Family Medicine. Estes has served on numerous boards and committees including the University Council on Aging and Human Development and the Society of Teachers of Preventive Medicine.

Sabiston is James B. Duke Professor and chairman of the Department of Surgery at Duke. He received his medical degree from the Johns Hopkins University School of Medicine, where he served in the Department of Surgery in various capacities until he came to Duke as professor and chairman of surgery in 1964. Sabiston has an international reputation as surgeon, editor, author, lecturer and teacher.

Lowenbach received his medical degree from the University of Hamburg in 1929. His career took him into the fields of medicine and physiology at the

and there's more proof on the way!

will see the completion of the Multiple Risk Factor Intervention Trial (MRFIT)—a six-year, 100-patient study assessing the factors that increase risk of cardiovascular disease. For the management of hypertension, the preferred 2-regimen in this study is reserpine-thiazide.

1978, in a preliminary report presented to the Epidemiology Section of the American Heart Association (Dallas, Nov 1978), after 12 months of the trial, fewer patients (5.3%) treated with reserpine suffered depression than even the untreated control group (7.7%)!

References and brief summary of prescribing information on last pages of this advertisement.

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Universities of Freiburg and Cologne, and to the Kaiser-Wilhelm Institute for Brain Research in Berlin. He was a fellow in psychiatry at the Norwegian Academy of Science and a ship's surgeon on whaling expeditions. In 1938, he joined the Henry Phipps Psychiatric Clinic at Johns Hopkins Hospital. Since 1940 he has been at Duke. He is now professor emeritus of psychiatry and assistant professor emeritus of pediatrics.

On leave from Duke 1949-1951, Lowenbach served with the U.S. Army in a number of leading positions, retiring from the reserves in 1965 with the rank of colonel.

Fellow or member of many scientific societies, Lowenbach is a diplomate in psychiatry and neurology of the American Board of Psychiatry and Neurology. He is author or co-author of 61 publications, and has served as consultant to many groups, including Womack Army Hospital, a number of VA Hospitals, Dorothea Dix State Hospital and the Mental Health Center in Washington.

Dr. Charles Ellenbogen, associate professor of medicine and clinical associate professor of community and family medicine, has been selected to receive the 1981 sustaining membership award of the Association of Military Surgeons of the U.S.

Ellenbogen, who is director of internal medicine at the Fayetteville Area Health Education Center (AHEC), received the award at the association's 88th meeting Nov. 1-5 in San Antonio, Texas. The award is presented annually to a person who has made a significant contribution to American medicine. The award consists of a \$1,000 prize and a scroll. The physician received his medical degree from the University of Chicago's Pritzker School of Medicine in 1964. He joined Duke's faculty in 1980 as medical director of the Fayetteville AHEC.

An internationally known pediatric urologist has been appointed head of the pediatric urology section in Duke University Medical Center's division of urologic surgery.

Dr. Lowell R. King, formerly surgeon-in-chief at the Children's Memorial Hospital in Chicago and chairman of the Department of Urology at Northwestern University, began work at Duke in the fall.

The surgeon has published more than 130 scientific articles and has written several chapters in surgical textbooks. He is co-editor of the two volume textbook, "Clinical Pediatric Urology."

"Duke is exceedingly fortunate to attract a specialist such as Dr. King who has a national and international reputation in the field of diagnosis and manage-

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WARNINGS

Small-bowel lesions (obstruction, hemorrhage, perforation and death) have occurred during therapy with enteric-coated formulations containing potassium, with or

without thiazides. Such potassium formulations should be used with Salutensin only when indicated and should be discontinued immediately if abdominal pain, distention, nausea, vomiting or gastrointestinal bleeding occurs. Use cautiously, and only when deemed essential, in fertile, pregnant or lactating patients.

Use in Pregnancy

Thiazides cross the placenta and can cause fetal or neonatal hyperbilirubinemia, thrombocytopenia, altered carbohydrate metabolism and possibly electrolyte disturbances. Fatal reactions may occur with reserpine during electroshock therapy; discontinue Salutensin 2 weeks before such therapy. Increased respiratory secretions, nasal congestion, cyanosis and anorexia may occur in infants born to reserpine-treated mothers.

PRECAUTIONS

Azotemia, hypochloremia, hyponatremia, hypochloremic alkalosis and hypokalemia

(especially with hepatic cirrhosis and corticosteroid therapy) may occur, particularly with pre-existing vomiting and diarrhea. Potassium loss may cause digitalis intoxication. *Potassium loss responds to potassium-rich foods, potassium chloride or, if necessary, discontinuation of therapy.* Serum ammonia elevation may precipitate coma in precomatose hepatic cirrhotics. Discontinue therapy 2 weeks before surgery or if myocardial irritability, progressive azotemia or severe depression occur. Exercise caution in patients with chronic uremia, angina pectoris, coronary thrombosis or extensive cerebral vascular disease or bronchial asthma and in those with a history of peptic ulceration or bronchial asthma; in post-sympathectomy patients; in patients on quinidine; and in patients with gallstones, in whom biliary colic may occur. Patients who have diabetes mellitus or who are suspected of being prediabetic should be kept under close observation if treated with this agent.

ment of disorders of the urinary tract in children," said Dr. David C. Sabiston Jr., James B. Duke Professor of Surgery and chairman of Duke's Department of Surgery. "He ranks among the top leaders in this specialty in the world."

King received his medical degree from Johns Hopkins Medical School in 1956. He completed his residency at the Brady Urological Institute. He was chairman of the division of urology at the Chicago Children's Memorial Hospital and was also chairman of the Department of Urology at the Presbyterian-St. Luke's Hospital in Chicago.

Dr. Maurice B. Landers, professor in the Department of Ophthalmology, was elected the North Carolina representative to the Board of Counselors of the American Academy of Ophthalmology.

Neil R. MacIntyre, assistant professor of medicine, received a \$2,500 research grant from the American Lung Association of North Carolina to support his project, "Non-invasive Assessment of Regional Pulmonary Diffusion and Perfusion."

Jack D. Keene, assistant professor of microbiology, was awarded a \$49,230 research grant from the National Institute of Allergy and Infectious Diseases.

Keene is studying "Replicative Mechanisms of the Negative Strand Viruses."

David J. Madden, research associate in the Department of Psychiatry, received a \$33,294 special research award from the National Institute of Aging to study "Age Effects in the Activation of Semantic Information."

Lyn A. Thet, assistant professor in the division of pulmonary medicine, was awarded a \$44,841 research grant from the National Heart, Lung and Blood Institute to study "Surfactant: Physical, Function and Structural Changes."

David S. Pisetsky, assistant professor of medicine and immunology, received a \$24,200 grant from the March of Dimes Birth Defects Foundation.

Rayford S. Jones, professor in the Department of Surgery, was awarded a \$56,698 research grant from the National Institute of Arthritis, Metabolism and Digestive Diseases. His area of study is "Control of Canalicular and Ductular Bile Production."

Jeffrey L. Houpt, associate professor and head of the division of psychosomatic medicine, received a \$64,005 graduate training award from the National Institute of Mental Health. Houpt is studying consultation-liaison psychiatry.

C. Frank Starmer, professor of computer science and associate professor of medicine, received \$173,333 from the National Library of Medicine for a

ADVERSE REACTIONS

Hydroflumethiazide

Skin-rashes (including exfoliative dermatitis), skin photosensitivity, urticaria, necrotizing angitis, xanthopsia, granulocytopenia, aplastic anemia, orthostatic hypotension (potentiated with alcohol, barbiturates or narcotics), allergic glomerulonephritis, acute pancreatitis, liver involvement (intrahepatic cholestatic jaundice), purpura plus or minus thrombocytopenia, hyperuricemia, hyperglycemia, glycosuria, malaise, weakness, dizziness, fatigue, paresthesias, muscle cramps, skin rash, epigastric distress, vomiting, diarrhea and constipation.

Reserpine

Depression, peptic ulceration, diarrhea, Parkinsonism, nasal stuffiness, dryness of the mouth, weight gain, impotence or decreased libido, conjunctival injection, dull sensorium, deafness, glaucoma, uveitis, optic atrophy, and, with overdosage, agitation, insomnia and nightmares.

USUAL DOSE

1 tablet b.i.d.

SUPPLIED

Bottles of 100 and 1000 scored 50 mg. tablets.

References:

1. Propranolol in the treatment of essential hypertension. Veterans Administration Cooperative Study Group on Antihypertensive Agents. *JAMA* 237:2303-2310, 1977.
2. Five-year findings of the hypertension detection and follow-up program: I. Reduction in mortality of persons with high blood pressure, including mild hypertension. Hypertension Detection and Follow-up Program Cooperative Group. *JAMA* 242:2562-2571, 1979.
3. The 1980 Report of the Joint National Committee on Detection, Evaluation, and Treatment of High Blood Pressure. *Arch Intern Med* 140:1280-1285, 1980.

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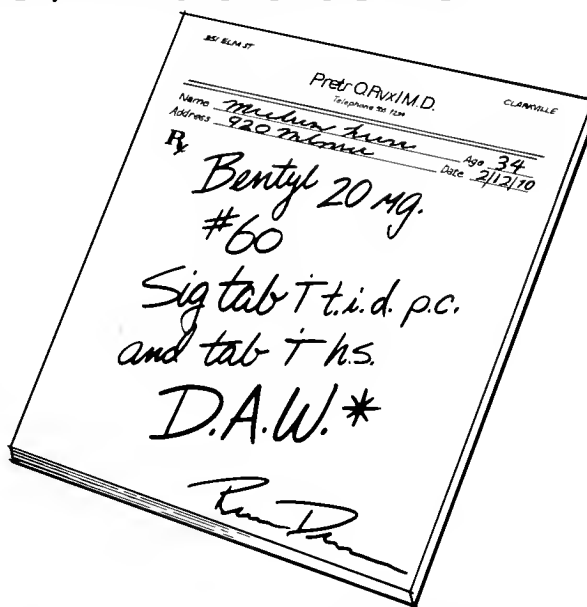


...in the functional bowel/irritable bowel syndrome*

be sure to specify

Bentyl[®]
(dicyclomine hydrochloride USP)

10 mg capsules, 20 mg tablets,
10 mg/5 ml syrup, 10 mg/ml injection



**D.A.W.-Dispense as written*

because:

- ⊕ The Bentyl molecule is a product of original Merrell research.
- ⊕ At Merrell Dow, Bentyl must go through 140 checkpoints/tests from its synthesis through the packaging of the final product.
- ⊕ Bentyl bioavailability of tablets, capsules, syrup and injectable is evidence of its prompt absorption.
- ⊕ Bentyl helps control abnormal gastrointestinal motor activity with minimal anticholinergic side effects. (See Warnings, Contraindications, Precautions, and Adverse Reactions on next page.)
- ⊕ The bioequivalence of the oral dosage forms permits a choice of tablet, capsules, or syrup that satisfies patient's dosage preferences.
- ⊕ Significant pharmacologic effect in the distal colon compared to placebo,¹ shows how Bentyl controls abnormal motor activity in the irritable colon patient.*

*This drug has been classified "probably" effective for this indication.

Merrell Dow

Reference:

1. Chowdhury AR and Lorber SH: Personal communication, 1980.

(See Product Information on the next page before prescribing Bentyl.)

Although the dose of Bentyl used to show pharmacologic effect was 50 mg, which is a higher single dose than that permitted in the labeling, the dose was considered justified, since the recommended daily dose of injectable Bentyl is 20 mg (2 ml) every 4 to 6 hours. Thus, in 8 hours, a patient could receive a total of 60 mg I.M. and, at that time, as a result of the sustained plasma levels from the 20 mg injections at 0 and 4 hours, might show an even higher plasma level than occurs after a single 50 mg dose. Presumably, the same pharmacologic effect would follow. These observations do not constitute evidence of efficacy.

Bentyl®
(dicyclomine hydrochloride USP)
Capsules, Tablets, Syrup, Injection
AVAILABLE ONLY ON PRESCRIPTION
Brief Summary

INDICATIONS

Based on a review of this drug by the National Academy of Sciences-National Research Council and/or other information, FDA has classified the following indications as "probably" effective:

For the treatment of functional bowel/irritable bowel syndrome (irritable colon, spastic colon, mucous colitis) and acute enterocolitis.

THESE FUNCTIONAL DISORDERS ARE OFTEN RELIEVED BY VARYING COMBINATIONS OF SEDATIVE, REASSURANCE, PHYSICIAN INTEREST, AMELIORATION OF ENVIRONMENTAL FACTORS.

For use in the treatment of infant colic (syrup).

Final classification of the less-than-effective indications requires further investigation.

CONTRAINDICATIONS: Obstructive uropathy (for example, bladder neck obstruction due to prostatic hypertrophy); obstructive disease of the gastrointestinal tract (as in achalasia, pyloroduodenal stenosis); paralytic ileus, intestinal atony of the elderly or debilitated patient; unstable cardiovascular status in acute hemorrhage; severe ulcerative colitis; toxic megacolon complicating ulcerative colitis; myasthenia gravis.

WARNINGS: In the presence of a high environmental temperature, heat prostration can occur with drug use (fever and heat stroke due to decreased sweating). Diarrhea may be an early symptom of incomplete intestinal obstruction, especially in patients with ileostomy or colostomy. In this instance treatment with this drug would be inappropriate and possibly harmful. Bentyl may produce drowsiness or blurred vision. In this event, the patient should be warned not to engage in activities requiring mental alertness such as operating a motor vehicle or other machinery or perform hazardous work while taking this drug. There are rare reports of infants, 6 weeks of age and under, administered dicyclomine hydrochloride syrup, who have evidenced respiratory symptoms (breathing difficulty, shortness of breath, breathlessness, respiratory collapse, apnea), as well as seizures, syncope, asphyxia, pulse rate fluctuations, muscular hypotonia, and coma. The above symptoms have occurred within minutes of ingestion and lasted 20 to 30 minutes. The timing and nature of the reactions suggest that they were a consequence of local irritation and/or aspiration rather than a direct pharmacologic effect. No known deaths or permanent adverse effects have been reported. Bentyl syrup should be used with caution in this age group.

PRECAUTIONS: Although studies have failed to demonstrate adverse effects of dicyclomine hydrochloride in glaucoma or in patients with prostatic hypertrophy, it should be prescribed with caution in patients known to have or suspected of having glaucoma or prostatic hypertrophy.

Use with caution in patients with:

Autonomic neuropathy. Hepatic or renal disease. Ulcerative colitis. Large doses may suppress intestinal motility to the point of producing a paralytic ileus and the use of this drug may precipitate or aggravate the serious complication of toxic megacolon.

Hypertension, coronary heart disease, congestive heart failure, cardiac arrhythmias, and hypertension.

Hiatal hernia associated with reflux esophagitis since anticholinergic drugs may aggravate this condition.

Do not rely on the use of the drug in the presence of complication of biliary tract disease. Investigate any tachycardia before giving anticholinergic (atropine-like) drugs since they may increase the heart rate. With overdosage, a curare-like action may occur.

ADVERSE REACTIONS: Anticholinergics/antispasmodics produce certain effects which may be physiologic or toxic depending upon the individual patient's response. The physician must delineate these. Adverse reactions may include xerostomia; urinary hesitancy and retention; blurred vision and tachycardia, palpitations; mydriasis; cycloplegia, increased ocular tension; loss of taste; headache; nervousness, drowsiness; weakness; dizziness; insomnia; nausea; vomiting; impotence, suppression of lactation; constipation; bloated feeling; severe allergic reaction or drug idiosyncrasies including anaphylaxis; urticaria and other dermal manifestations; some degree of mental confusion and/or excitement, especially in elderly persons; and decreased sweating. With the injectable form there may be a temporary sensation of light-headedness and occasionally local irritation.

DOSAGE AND ADMINISTRATION: Dosage must be adjusted to individual patient's needs.

Usual Dosage

Bentyl 10 mg. capsule and syrup: *Adults:* 1 or 2 capsules or teaspoonfuls syrup three or four times daily. *Children:* 1 capsule or teaspoonful syrup three or four times daily. *Infants:* ½ teaspoonful syrup three or four times daily. (Dilute with equal volume of water.)

Bentyl 20 mg. *Adults:* 1 tablet three or four times daily

Bentyl Injection: *Adults:* 2 ml. (20 mg.) every four to six hours intramuscularly only.

NOT FOR INTRAVENOUS USE.

MANAGEMENT OF OVERDOSE: The signs and symptoms of overdose are headache, nausea, vomiting, blurred vision, dilated pupils, hot, dry skin, dizziness, dryness of the mouth, difficulty in swallowing, CNS stimulation. Treatment should consist of gastric lavage, emetics, and activated charcoal. Barbiturates may be used either orally or intramuscularly for sedation but they should not be used if Bentyl with Phenobarbital has been ingested. If indicated, parenteral cholinergic agents such as Urecholine® (bethanechol chloride USP) should be used.

Product Information as of July, 1980

Injectable dosage forms manufactured by

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Swiftwater, Pennsylvania 18370 or

TAYLOR PHARMACEUTICAL COMPANY

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research program called, "Medical Data Bases and Clinical Investigation."

Marc Drezner, assistant professor of medicine, received a \$35,436 research grant from the National Institute of Arthritis, Metabolism and Digestive Diseases to study "Pathogenesis of Vitamin D Refractory Osteomalacias." He also received a \$25,000 grant from the March of Dimes Birth Defects Foundation.

A Duke University Medical Center researcher has received a \$280,000 grant from the Andrew W. Mellon Foundation to study the inner workings of the pituitary, the pea-sized gland beneath the brain that controls reproduction.

Dr. P. Michael Conn, a molecular endocrinologist, believes that if scientists can understand the molecular regulation within the pituitary, they can learn to control fertility and treat pituitary disorders.

"This type of research may lead to the contraceptive of the future," Conn said. "It's like taking a clock apart and looking at the inside."

The scientist said Duke researchers are the first to look at each of the three steps of gonadotropin-releasing hormone action in the pituitary.

Conn began his work three years ago. The Mellon Foundation grant was the result of a collaborative effort of the Ford, Mellon and Rockefeller Foundations to promote targeted research in reproductive science.

Dr. William W. Johnson, professor and director of Duke University Medical Center's division of Cytopathology, has been named president of the American Society of Cytology. He was elected to the post at the society's annual scientific meeting Nov. 1-8 in St. Louis.

Johnson is associate editor of "Actacytologica," the American Society of Cytology Publication, and serves as chairman of the Committee on Self-assessment Testing in Cytology of the American Society of Clinical Pathologists.

At Duke, he is a faculty member of the Comprehensive Cancer Center and a member of the advisory committee for the Clinical Cancer Training Program.

A Duke University Medical School alumnus, Johnston was promoted to professor of pathology in 1972. He has been director of the cytopathology laboratories and training program since 1966.

James B. Wyngaarden, professor in the Department of Medicine, received a \$52,951 national research service award from the National Institute of Arthritis, Metabolism and Digestive Diseases. His area of study is metabolic and rheumatic diseases.

Harold E. Lebovitz, professor of endocrinology and assistant professor of physiology, received a national research service award of \$72,097 from the National Institute of Arthritis, Metabolism and Digestive Diseases. Lebovitz is studying endocrinology and diabetes.

Theodore A. Slotkin, professor of pharmacology, received a research scientist development award of \$38,362 from the National Institute on Drug Abuse. Slotkin is studying "Drugs and the Development of the Nervous System."

Jorge V. Bartolome, assistant medical research professor of pharmacology, received a \$61,582 research grant from the National Institute of Child Health and Human Development. His study is "Development Neurotoxicology of Mercury."

Barton F. Haynes, associate professor in the Department of Medicine, received an \$88,774 research grant and a \$35,520 development award from the National Cancer Institute for "Immunoregulation in Autoimmunity and Malignant Disease."

Malcom P. Tyor, professor and chief of the division of gastroenterology, received a \$46,515 national research service award from the National Institute of Arthritis, Metabolism and Digestive Diseases.

Ruby L. Wilson, professor and dean of the School of Nursing, received two grants from the division of nursing in the Department of Health and Human Services. A \$170,575 grant was awarded for advanced nurse training and a \$52,652 grant was awarded for professional nurse traineeships.

Frederick R. Cobb, associate professor of cardiology and assistant professor in the Department of Radiology, received a \$101,202 grant from the National Heart, Lung and Blood Institute for his program, "Regional Blood Flow After Acute Myocardial Infarction."

Robert M. Bell, associate professor in the Department of Biochemistry, received a \$71,643 grant from the National Institute of Arthritis, Metabolism and Digestive Diseases for his program, "Regulation of Glycerolipid Synthetic Enzymes."

Harvey J. Cohen, professor of medicine and chief of medical services at the Veterans Administration Medical Center, received a \$41,348 cooperative clinical award from the National Cancer Institute for a southeastern cancer study group.

Peter K. Smith, in the Department of Surgery, re-

ceived a \$27,355 grant from the National Institute to study "Surgical Treatment of Cardiac Arrhythmias."

John C. Cambier, associate professor of immunology, received a \$36,264 research grant from the National Institute of Allergy and Infectious Diseases to study the molecular biology of B-Cell tolerance.

Lazaro J. Mandel, associate professor in the Department of Physiology, received a \$52,725 research grant from the National Institute of General Medical Sciences to study "Mechanisms of Active and Passive Solute Transport."

Nicholas M. Kredich, professor of medicine and assistant professor of biochemistry, received a research grant of \$30,235 from the National Institute of Arthritis, Diabetes, Digestive and Kidney Diseases. He is studying regulation of sulfur metabolism.

Ralph L. Cooper, assistant medical research professor of psychology, received a research grant of \$69,325 from the National Institute on Aging. The title of Cooper's study is "Hormonal and Behavioral Consequences of Aging."

Galen S. Wagner, director of the Cardiac Care Unit and associate professor of cardiology, received a \$27,116 grant from the National Center for Health Services Research-OASH to study the effectiveness of mobile intensive care.

Michael F. Frosolono, adjunct associate professor in the division of radiobiology, received a \$58,284 research grant from the National Institute of Environmental Health Sciences. Frosolono's area of study is the etiology of phosgene poisoning.

Paul M. Conn, assistant professor in the Department of Pharmacology, received a \$38,362 grant for his program, "Gonadotropin Releasing Hormone Mechanism" from the National Institute of Child Health and Human Development.

Sheldon R. Pinnell, professor of dermatology, received an \$83,969 research grant from the National Institute of Arthritis, Diabetes and Kidney Diseases to study "Collagen Biosynthesis in Connective Tissue Disease."

SIR WILLIAM WITHEY GULL [1816-1890]

You will soon learn that diseases, like other natural facts, require no peculiar mode of study. . . . Man is naturally unwilling to feel himself but a part, though the highest part as yet, of the course of nature, however deeply he may be convinced that all is ruled by the wisest providence. He desires to feel himself an exception from the common laws of nature. . . . The sense of mystery is so indigenous, . . . that, although I do not for a moment suppose any well-educated medical man could think that disease ever comes but through discoverable natural courses, we assume almost as much when we are satisfied not to have traced them to their beginnings. . . . Diseases are but parts of a course of natural history.

British Medical Journal 2:425, 1874

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FOR SALE: NEW 5.4 Cu. Ft. Scientific Equipment Company Surgical Instrument Sterilizer; Pressure, Electrically and Fuel Burner Heated. CRM Automatic Control, 110 Volt 60 cycle A.C.; Wt. 106 Lbs.; Serial No. 26F40. Price \$875.00 (1) NEW Electric Dest-top Hot Water Pelton-Crane Sterilizer. Price \$150.00 (1) Used Basic Examining Table, Excellent Condition, with Stirrups and Padded Top and Naugehyde covering; hinged head and foot. Wood Construction. Price \$195.00 (1) NEW Dare Hemoglobinometer. Price \$50.00. (1) Sahli Hemoglobinometer, used. Price \$10.00 (1) Used Clay-Adams Micro-Centrifuge with lot of Micro-Pipettes and Sterial Blood Lancets. Price \$75.00 (1) Lot of new Calibrated Pasteur

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PHYSICIANS, AN EXCITING OPPORTUNITY AWAITS YOU ON THE SUBTROPICAL NORTH CAROLINA COAST — Practice opportunities in Internal Medicine, Family Practice, General Surgery and Obstetrics/Gynecology are available at Brunswick County Hospital, a new modern 60 bed facility in Supply, North Carolina, a coastal community in the vicinity of Myrtle Beach, South Carolina. Favorable earnings potential, start-up financial incentives and physicians' offices next to the hospital are available. Partnership possibilities exist. Low malpractice rates. Practice location qualifies for repayment of student loan obligations.

LOCAL HEALTH ADMINISTRATOR — This is administrative work as the Director of a varied and complex county health agency with a staff of 101 serving a population of 162,000. Education and experience desired — Master's degree in public health administration from a two-year program and five years of experience in administrative management, three of which must have been in a health related program; or master's degree in any area of public health and six years of administrative management experience, four of which must be in a health related program; or master's degree in public administration or any health related field and six years of administrative management experience, five of which must have been in a health related program; or graduation from a four-year college or university and eight years of experience in a human services field, six of which must have been in a health related program with at least five years in an administrative management capacity; or an equivalent combination of education and experience. Salary \$33,599-\$44,758 with exceptional benefits. Send resume to Mr. Phil Hinely, County Manager, P.O. Box 1578, Gastonia, N.C. 28052. Closing date March 15, 1982. EOE M/F/V/H.

PUBLIC HEALTH PHYSICIAN — This is administrative work as the Director of a varied and complex county health agency with a staff of 101 serving a populated of 162,000. Education and experience desired — Graduation from an accredited school of medicine, completion of internship in an approved hospital, and five years experience in a professional medical capacity including three years of administrative management experience in a health program; or graduation from an accredited school of medicine, completion of internship in an approved hospital, a Master's Degree in public health and three years experience in a professional medical capacity including two years of administrative management experience in a health program; or an equivalent combination of training and experience. Salary \$49,258-\$65,945. Send resume to Mr. Phil Hinely, County Manager, P.O. Box 1578, Gastonia, N.C. 28052, closing date March 15, 1982. EOE M/F/V/H.

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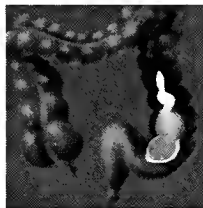
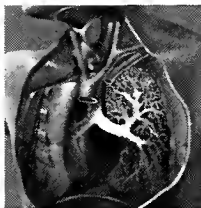
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in recurrent UTI...
a continuing record of high clinical effectiveness against common uropathogens

in acute otitis media in children...
effective against both major otic pathogens...with b.i.d. convenience

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in shigellosis...
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Before prescribing, please consult complete product information, a summary of which follows:
Indications and Usage: For the treatment of urinary tract infections due to susceptible strains of the following organisms: *Escherichia coli*, *Klebsiella-Enterobacter*, *Proteus mirabilis*, *Proteus vulgaris*, *Proteus morganii*. It is recommended that initial episodes of uncomplicated urinary tract infections be treated with a single effective antibacterial agent rather than the combination. *Note:* The increasing frequency of resistant organisms limits the usefulness of all antibacterials, especially in these urinary tract infections.

For acute otitis media in children due to susceptible strains of *Haemophilus influenzae* or *Streptococcus pneumoniae* when in physician's judgment it offers an advantage over other antimicrobials. Limited clinical information presently available on effectiveness of treatment of otitis media with Bactrim when infection is due to ampicillin-resistant *Haemophilus influenzae*. To date, there are limited data on the safety of repeated use of Bactrim in children under two years of age. Bactrim is not indicated for prophylactic or prolonged administration in otitis media at any age.

For acute exacerbations of chronic bronchitis in adults due to susceptible strains of *Haemophilus influenzae* or *Streptococcus pneumoniae* when in physician's judgment it offers an advantage over a single antimicrobial agent.

For enteritis due to susceptible strains of *Shigella flexneri* and *Shigella sonnei* when antibacterial therapy is indicated.

Also for the treatment of documented *Pneumocystis carinii* pneumonia. To date, this drug has been tested only in patients 9 months to 16 years of age who were immunosuppressed by cancer therapy.

Contraindications: Hypersensitivity to trimethoprim or sulfonamides; patients with documented megaloblastic anemia due to folate deficiency; pregnancy at term; nursing mothers because sulfonamides are excreted in human milk and may cause kernicterus; infants less than 2 months of age.

Warnings: BACTRIM SHOULD NOT BE USED TO TREAT STREPTOCOCCAL PHARYNGITIS. Clinical studies show that patients with group A β -hemolytic streptococcal tonsillopharyngitis have higher incidence of bacteriologic failure when treated with Bactrim than do those treated with penicillin. Deaths from hypersensitivity reactions, agranulocytosis, aplastic anemia and other blood dyscrasias have been associated with sulfonamides. Experience with trimethoprim is much more limited but occasional interference with hematopoiesis has been reported as well as an increased incidence of thrombopenia with purpura in elderly patients on certain diuretics, primarily thiazides. Sore throat, fever, pallor, purpura or jaundice may be early signs of serious blood disorders. Frequent CBC's are recommended; therapy should be discontinued if a significantly reduced count of any formed blood element is noted.

Precautions: General: Use cautiously in patients with impaired renal or hepatic function, possible folate deficiency, severe allergy or bronchial asthma. In patients with glucose-6-phosphate dehydrogenase deficiency, hemolysis, frequently dose-related, may occur. During therapy, maintain adequate fluid intake and perform frequent urinalyses, with careful microscopic examination, and renal function tests, particularly where there is impaired renal function. Bactrim may prolong prothrombin time in those receiving warfarin; reassess coagulation time when administering Bactrim to these patients.

Pregnancy: Teratogenic Effects: Pregnancy Category C. Because trimethoprim and sulfamethoxazole may interfere with folic acid metabolism, use during pregnancy only if potential benefits justify the potential risk to the fetus.

Adverse Reactions: All major reactions to sulfonamides and trimethoprim are included, even if not reported with Bactrim. *Blood dyscrasias:* Agranulocytosis, aplastic anemia, megaloblastic anemia, thrombopenia, leukopenia, hemolytic anemia, purpura, hypoprothrombinemia and methemoglobinemia. *Allergic reactions:* Erythema

multiforme, Stevens-Johnson syndrome, generalized skin eruptions, epidermal necrolysis, urticaria, serum sickness, pruritus, exfoliative dermatitis, anaphylactoid reactions, periorbital edema, conjunctival and scleral injection, photosensitization, arthralgia and allergic myocarditis. *Gastrointestinal reactions:* Glossitis, stomatitis, nausea, emesis, abdominal pains, hepatitis, diarrhea and pancreatitis. *CNS reactions:* Headache, peripheral neuritis, mental depression, convulsions, ataxia, hallucinations, tinnitus, vertigo, insomnia, apathy, fatigue, muscle weakness and nervousness.

Miscellaneous reactions: Drug fever, chills, toxic nephrosis with oliguria and anuria, periarthritis nodosa and L.E. phenomenon. Due to certain chemical similarities to some goitrogens, diuretics (acetazolamide, thiazides) and oral hypoglycemic agents, sulfonamides have caused rare instances of goiter production, diuresis and hypoglycemia in patients; cross-sensitivity with these agents may exist. In rats, long-term therapy with sulfonamides has produced thyroid malignancies.

Dosage: Not recommended for infants less than two months of age.

URINARY TRACT INFECTIONS AND SHIGELLOSIS IN ADULTS AND CHILDREN, AND ACUTE OTITIS MEDIA IN CHILDREN:

Adults: Usual adult dosage for urinary tract infections—1 DS tablet (double strength), 2 tablets (single strength) or 4 teasp. (20 ml) b.i.d. for 10-14 days. Use identical daily dosage for 5 days for shigellosis.

Children: Recommended dosage for children with urinary tract infections or acute otitis media—8 mg/kg trimethoprim and 40 mg/kg sulfamethoxazole per 24 hours, in two divided doses for 10 days. Use identical daily dosage for 5 days for shigellosis.

For patients with renal impairment: Use recommended dosage regimen when creatinine clearance is above 30 ml/min. If creatinine clearance is between 15 and 30 ml/min, use one-half the usual regimen. Bactrim is not recommended if creatinine clearance is below 15 ml/min.

ACUTE EXACERBATIONS OF CHRONIC BRONCHITIS IN ADULTS:

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PNEUMOCYSTIS CARINII PNEUMONITIS:

Recommended dosage: 20 mg/kg trimethoprim and 100 mg/kg sulfamethoxazole per 24 hours in equal doses every 6 hours for 14 days. See complete product information for suggested children's dosage table.

Supplied: Double Strength (DS) tablets, each containing 160 mg trimethoprim and 800 mg sulfamethoxazole, bottles of 100; Tel-E-Dose[®] packages of 100; Prescription Paks of 20 and 28. Tablets, each containing 80 mg trimethoprim and 400 mg sulfamethoxazole—bottles of 100 and 500, Tel-E-Dose[®] packages of 100; Prescription Paks of 40. Pediatric Suspension, containing 40 mg trimethoprim and 200 mg sulfamethoxazole per teaspoonful (5 ml); cherry-flavored—bottles of 100 ml and 16 oz (1 pint). Suspension, containing 40 mg trimethoprim and 200 mg sulfamethoxazole per teaspoonful (5 ml); fruit-licorice flavored—bottles of 16 oz (1 pint).



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1. Rubin RH, Swartz MN. *N Engl J Med* 303:426-432, Aug 21, 1980. 2. Data on file, Medical Department, Hoffmann-La Roche Inc.

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*Due to susceptible strains of indicated organisms

Please see previous page for summary of product information.

North Carolina

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The effectiveness of Valium (diazepam/Roche) in long-term use, that is, more than 4 months, has not been assessed by systematic clinical studies. The physician should periodically reassess the usefulness of the drug for the individual patient.

Contraindicated: Known hypersensitivity to the drug. Children under 6 months of age. Acute narrow angle glaucoma, may be used in patients with open angle glaucoma who are receiving appropriate therapy.

Warnings: Not of value in psychotic patients. Caution against hazardous occupations requiring complete mental alertness. When used adjunctively in convulsive disorders, possibility of increase in frequency and/or severity of grand mal seizures may require increased dosage of standard anticonvulsant medication. Abrupt withdrawal may be associated with temporary increase in frequency and/or severity of seizures. Advise against simultaneous ingestion of alcohol and other CNS depressants. Withdrawal symptoms similar to those with barbiturates and alcohol have been observed with abrupt discontinuation, usually limited to extended use and excessive doses. Infrequently, milder withdrawal symptoms have been reported following abrupt discontinuation of benzodiazepines after continuous use, generally at higher therapeutic levels, for at least several months. After extended therapy, gradually taper dosage. Keep addiction-prone individuals under careful surveillance because of their predisposition to habituation and dependence.

Usage in Pregnancy: Use of minor tranquilizers during first trimester should almost always be avoided because of increased risk of congenital malformations as suggested in several studies. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.

Precautions: If combined with other psychotropics or anticonvulsants, consider carefully pharmacology of agents employed, drugs such as phenothiazines, narcotics, barbiturates, MAO inhibitors and other antidepressants may potentiate its action. Usual precautions indicated in patients severely depressed, or with latent depression, or with suicidal tendencies. Observe usual precautions in impaired renal or hepatic function. Limit dosage to smallest effective amount in elderly and debilitated to preclude ataxia or oversedation. The clearance of Valium and certain other benzodiazepines can be delayed in association with Tagamet (cimetidine) administration. The clinical significance of this is unclear.

Side Effects: Drowsiness, confusion, diplopia, hypotension, changes in libido, nausea, fatigue, depression, dysarthria, jaundice, skin rash, ataxia, constipation, headache, incontinence, changes in salivation, slurred speech, tremor, vertigo, urinary retention, blurred vision. Paradoxical reactions such as acute hyperexcited states, anxiety, hallucinations, increased muscle spasticity, insomnia, rage, sleep disturbances, stimulation have been reported, should these occur, discontinue drug. Isolated reports of neutropenia, jaundice, periodic blood counts and liver function tests advisable during long-term therapy.

Dosage: Individualize for maximum beneficial effect. **Adults:** Anxiety disorders, symptoms of anxiety, 2 to 10 mg b.i.d. to q.i.d., alcoholism, 10 mg t.i.d. or q.i.d. in first 24 hours, then 5 mg t.i.d. or q.i.d. as needed, adjunctively in skeletal muscle spasm, 2 to 10 mg t.i.d. or q.i.d.; adjunctively in convulsive disorders, 2 to 10 mg b.i.d. to q.i.d. **Geriatric or debilitated patients:** 2 to 2½ mg, 1 or 2 times daily initially, increasing as needed and tolerated. (See Precautions.) **Children:** 1 to 2½ mg t.i.d. or q.i.d. initially, increasing as needed and tolerated (not for use under 6 months).

How Supplied: For oral administration, Valium scored tablets—2 mg, white, 5 mg, yellow, 10 mg, blue—bottles of 100* and 500.* Prescription Paks of 50, available in trays of 10.* Tel-E-Dose® packages of 100, available in trays of 4 reverse-numbered boxes of 25,† and in boxes containing 10 strips of 10.†

*Supplied by Roche Products Inc., Manati, Puerto Rico 00701

†Supplied by Roche Laboratories, Division of Hoffmann-La Roche Inc., Nutley, New Jersey 07110

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SYMPOSIUM
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Blockade Runner
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COMMITTEE CONCLAVE
September 29-October 3, 1982
Mid Pines Club
Southern Pines, N.C.



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*Data on file, Bristol Laboratories.

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INDICATIONS:

Although the principal indication for cloxacillin sodium is in the treatment of infections due to penicillinase-producing staphylococci, it may be used to initiate therapy in such patients in whom a staphylococcal infection is suspected. (See Important Note below.)

Bacteriologic studies to determine the causative organisms and their sensitivity to cloxacillin sodium should be performed.

IMPORTANT NOTE

When it is judged necessary that treatment be initiated before definitive culture and sensitivity results are known, the choice of cloxacillin sodium should take into consideration the fact that it has been shown to be effective only in the treatment of infections caused by pneumococci, Group A beta-hemolytic streptococci, and penicillin G-resistant and penicillin G-sensitive staphylococci. If the bacteriology report later indicates the infection is due to an organism other than a penicillin G-resistant staphylococcus sensitive to cloxacillin sodium, the physician is advised to continue therapy with a drug other than cloxacillin sodium or any other penicillinase-resistant semi-synthetic penicillin.

Recent studies have reported that the percentage of staphylococcal isolates resistant to penicillin G outside the hospital is increasing, approximating the high percentage of resistant staphylococcal isolates found in the hospital. For this reason, it is recommended that a penicillinase-resistant penicillin be used as initial therapy for any suspected staphylococcal infection until culture and sensitivity results are known.

Cloxacillin sodium is a compound that acts through a mechanism similar to that of methicillin against penicillin G-resistant staphylococci. Strains of staphylococci resistant to methicillin have existed in nature and it is known that the number of these strains reported has been increasing. Such strains of staphylococci have been capable of producing serious disease, in some instances resulting in fatality. Because of this, there is concern that widespread use of the penicillinase-resistant penicillins may result in the appearance of an increasing number of staphylococcal strains which are resistant to these penicillins.

Methicillin-resistant strains are almost always resistant to all other penicillinase-resistant penicillins (cross-resistance with cephalosporin derivatives also occurs frequently). Resistance to any penicillinase-resistant penicillin should be interpreted as evidence of clinical resistance to all, in spite of the fact that minor variations in *in vitro* sensitivity may be encountered when more than one penicillinase-resistant penicillin is tested against the same strain of staphylococcus.

CONTRAINDICATIONS:

A history of a previous hypersensitivity reaction to any of the penicillins is a contraindication.

RESULTS OF ORAL THERAPY revealed a high percentage of treatment failures with penicillin V potassium, but no failures with Tegopen.

		Given Tegopen® (cloxacillin sodium)	Given penicillin V-K
<i>Staphylococcus aureus</i>	(78 patients)	39	39
Returned to clinic at one week		29†	38†
Treatment failure at one week		0	18 (47.4%)
<i>Staphylococcus aureus</i> and <i>Streptococcus pyogenes</i>	(9 patients)	4	5
Returned to clinic at one week		4	5
Treatment failure at one week		0	2 (40%)
No initial bacterial growth	(14 patients)	9	5
All 14 healed, regardless of which antibiotic was administered.			
Beta-hemolytic <i>Streptococcus</i>	(1 patient)	0	1
TOTALS:	102 patients	52 patients	50 patients

†Eleven patients did not return for their one-week checkup. These were all called by telephone, and their families reported

the lesions had healed. One patient was dropped from the study, early, because of adverse reaction to medication

STUDY: DESCRIPTION/PROTOCOL

- 102 nonselected subjects, with initial bacteriology as follows: 77% *Staphylococcus aureus*, 9% mixed *Staphylococcus aureus* and *Streptococcus pyogenes*, and 1% beta-hemolytic *Streptococcus*.†
- All patients were given randomized therapy—Tegopen capsules or oral solution, or penicillin V-K tablets or oral solution, in recommended dosages according to body weight.

- All patients were evaluated after one week's therapy. If there was no improvement, therapy was switched to the other antibiotic. The "other antibiotic" proved to be Tegopen 100% of the time because no treatment failures had occurred with Tegopen.
- A final assessment of progress was made two weeks after initiation of Tegopen therapy.

†The remainder, to equal 100%, consisted of 14 patients (13%) who exhibited no initial bacterial growth. These 14 were all healed, whether given Tegopen or penicillin V-K.

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WARNING:

Serious and occasionally fatal hypersensitivity (anaphylactoid) reactions have been reported in patients on penicillin therapy. Although anaphylaxis is more frequent following parenteral therapy it has occurred in patients on oral penicillins. These reactions are more apt to occur in individuals with a history of sensitivity to multiple allergens.

There have been well documented reports of individuals with a history of penicillin hypersensitivity reactions who have experienced severe hypersensitivity reactions when treated with a cephalosporin. Before therapy with a penicillin, careful inquiry should be made concerning previous hypersensitivity reactions to penicillins, cephalosporins, and other allergens. If an allergic reaction occurs, the drug should be discontinued and the patient treated with the usual agents, e.g., pressor amines, antihistamines, and corticosteroids.

Safety for use in pregnancy has not been established.

PRECAUTIONS:

The possibility of the occurrence of superinfections with mycotic organisms or other pathogens should be kept in mind when using this compound, as with other antibiotics. If superinfection occurs during therapy, appropriate measures should be taken.

As with any potent drug, periodic assessment of organ system function, including renal, hepatic, and hematopoietic, should be made during long-term therapy.

ADVERSE REACTIONS:

Gastrointestinal disturbances, such as nausea, epigastric discomfort, flatulence, and loose

stools, have been noted by some patients. Mildly elevated SGOT levels (less than 100 units) have been reported in a few patients for whom pretherapeutic determinations were not made. Skin rashes and allergic symptoms, including wheezing and sneezing, have occasionally been encountered. Eosinophilia, with or without overt allergic manifestations, has been noted in some patients during therapy.

USUAL DOSAGE:

Adults: 250 mg q 6h.

Children: 50 mg./Kg./day in equally divided doses q 6h. Children weighing more than 20 Kg. should be given the adult dose. Administer on empty stomach for maximum absorption.

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It works out better for Dr. Collins. And for the Army. He has a relatively trouble free practice. And the Army has a first-rate surgeon.

There are other rewards for being an Army surgeon. Like the starting salary. For \$35,600, it even pays to start at the bottom.

Every Army surgeon is commissioned as a Captain or higher. He earns 30 days paid vacation a year. And his noncontributory retirement benefits are substantial.

Jack Collins joined the Army to practice surgery. . .not bookkeeping, typing, accounting, or hiring office help. Army medicine is as free from nonmedical distractions as it is possible for any practice to be.

The Army Medical Department has positions available or projected requirements for physicians trained in the following specialties in the Southeastern United States:

General Surgery

Child Neurology

Neurosurgery

Emergency Medicine

Orthopedic Surgery

Cardiology

Plastic Surgery

Psychiatry

Anesthesiology

Oncology

Obstetrics/Gynecology

Diagnostic Radiology

Otolaryngology

Therapeutic Radiology

Urology

If you desire an attractive alternative to civilian practice for a reasonable net amount of money and want to spend a reasonable amount of time with your family, then maybe you should find out more about Army Medicine.

To obtain more information on eligibility, salary, and fringe benefits, write or call collect:

CPT Edward R. Miller, MSC
Eisenhower Army Medical Center
Fort Gordon, GA 30905
(404) 790-6939



PRESIDENT'S NEWSLETTER

NORTH CAROLINA MEDICAL SOCIETY

NO. 10

MARCH 1982

Dear Colleagues:

Another long session of the Executive Council occurred on February 5 and 6. A Vice-President observed that there is little wonder that so many of us are "broad in the beam". Much discussion centered on the "Feasibility Study" concerning the necessity of a new roof and the feasibility of an additional floor for the Society's Headquarters Building. The ad hoc Committee will continue its study and make its final report on April 3 in order that it can be considered at the May House of Delegates.

The Council discussed, at length, the four excellent reports on Medicaid submitted by the ad hoc Committee of Chairman of the Specialty Sections. The Council approved Reports A, B, and D and, quite appropriately, referred Report C to the House of Delegates for consideration. Pursuant to this action, Reports A, B, and D were submitted to Sarah T. Morrow, M.D., before our deadline date, February 15. Because of the importance of these reports, they are attached to this letter. Please read all -- particularly Report C so that your views can be expressed at the Reference Committee and in the House of Delegates!

On February 16, the "Request for Proposal" for the State Employees' Health Plan was released. Rumor has it that 100 copies were made available to prospective bidders. In a recent NEWSLETTER, I discussed some of the criteria proposed by the Mercer Company, which caused concern among our members. Although we were successful in eliminating the limitation on prenatal visits, the RFP still has some features which will be distasteful to physicians and not cost-effective for State Employees or the State. Unless a second surgical opinion is obtained (except on an emergency basis), reduced benefits will be paid for these five surgical procedures: hemorrhoidectomy, cholecystectomy, total hysterectomy, transurethral resection of the prostate, tonsillectomy and adenoidectomy. This reduction in benefits will apply to physician fees as well as to hospital room and board and cannot be included in the deductible or out-of-pocket limit of the State Employees, who will then be billed by both the hospital and the physician. The Plan Administrator will be required to provide the employee the names of three conveniently located board certified surgeons and will also arrange for the appointment of the patient with the second surgeon. Mercer Company felt that the Plan Administrator might need to "contract for services by physicians providing second opinions". However, the Plan will pay benefits "as usual" as long as the second opinion has been obtained "regardless of the opinion". Payment will be made by the Plan to the second surgeon, and for any additional laboratory and x-ray examinations required.

Eight optional cost containment programs are listed and each proposal must contain four optional programs of the Plan Administrator's choice and design. Retrospective review is a requirement. The optional programs are:

1. Program to Reduce Weekend Admission Stays
2. Program for Current Hospitalization Utilization Review

3. Program for Prospective Hospitalization Utilization Review
4. Program for Prospective Review of Emergency Room Use
5. Utilization and Cost Review of Ancillary Services
6. Alternative Reimbursement Methods -- Hospital and Physicians
7. Incentive Program to Reduce Hospital Stays
8. Program to Promote Use of Home Health Care

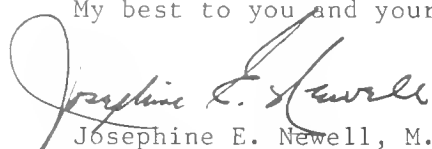
In December, I wrote you that several large County Medical Societies were quite concerned about North Carolina's Right to Natural Death Statutes ("Living Will", etc.). Because of growing concern, at my request, our Legal Counsel wrote a paper for the December NCMJ on the matter. Because of increasing concern and frustration of the membership, an ad hoc Committee, chaired by Julius Howell, M.D., J.D., has been appointed to study the ethical, legal and medical aspects of the Statute and its 1981 Amendment. The Section Chairmen, the core of the new ad hoc Committee, demonstrated their eagerness to have a part in major medical policy decisions by their conscientious response to the recent Medicaid issue. They will be joined by three members of the Ethics Committee and the Executive Committee of the Committee on Legislation. Our sagacious colleague, Julius Howell, both an attorney and plastic surgeon, has called the first meeting of the ad hoc Committee on Sunday, February 28, 1982. Top priority must be given this issue which holds such serious implications for the practice of medicine as well as the life and death of our patients.

At its February meeting, the Council devised a questionnaire, to be sent to the entire membership, for your personal evaluation of services now being rendered by the State Society. **PLEASE COMPLETE AND RETURN** in the enclosed postage paid envelope, as soon as you receive it, by **SEPARATE MAILING**. It is essential that the Council knows your evaluation of the effectiveness of the Society's current operation. In this era of austere budgeting, it is vital to determine the cost-effectiveness of each of the Society's publications. The continued publication of each (**THE NORTH CAROLINA MEDICAL JOURNAL, THE BULLETIN, PRESIDENT'S NEWSLETTER**) may be determined by your responses, after consideration by the House of Delegates! The Executive Council earnestly desires to structure the North Carolina Medical Society to best meet the needs of its membership!

At last, we have a definition of the "visit or encounter," in the Medicaid "18 visits". All professional services rendered to a recipient on one date of service for the same complaint will be counted as one visit. **BE SURE** that you and your staff read all "**SPECIAL MEDICAID BULLETINS**" received in the past 60 days and those to be published very soon. Again, our gratitude has been expressed to Barbara D. Matula and Sarah T. Morrow, M.D., for helping us out of this ditch -- one more time!

Please plan to attend the Annual Meeting of the North Carolina Medical Society, May 6-8. Critical medical issues will be addressed by the Legislature during its June Session. The Medical Society must consider each of these issues and determine a firm stand on each -- during our Annual Meeting in May. Every member is welcome at both sessions of the House of Delegates (Thursday, May 6, and Saturday, May 8). Remember that any member can speak at Reference Committee hearings, which will occur Thursday afternoon, May 6. Come and be heard! Your opinion is just as important as that of any other member. We cannot represent you without your direction. Your participation is essential!

My best to you and your family,


Josephine E. Newell, M.D.
President

For your patients' benefit...

**BEFORE YOU WRITE
OUR NEXT ANTIARTHRITIC
PRESCRIPTION,
PLEASE READ
THIS MESSAGE**



WHEN YOU'RE WRITING YOUR NEXT PRESCRIPTION FOR IBUPROFEN, PLEASE REMEMBER:

RUFEN® (ibuprofen/Boots)

(For full prescribing information, see package brochure)

RUFEN® Tablets

(ibuprofen)

INDICATIONS AND USAGE: Treatment of signs and symptoms of rheumatoid arthritis and osteoarthritis during acute flares and in the long-term management of these diseases. Safety and effectiveness have been established for Functional Class IV rheumatoid arthritis.

Relief of mild to moderate pain.

CONTRAINDICATIONS: Patients hypersensitive to ibuprofen, or with the syndrome of nasal polyps, angioedema and bronchospastic reactivity to aspirin or other nonsteroidal anti-inflammatory drugs (see **WARNINGS**).

WARNINGS: Anaphylactoid reactions have occurred in patients hypersensitive to aspirin (see **CONTRAINDICATIONS**). Peptic ulceration and gastrointestinal bleeding, sometimes severe, have been reported. Peptic ulceration and gastrointestinal bleeding can end fatally, however, an association has not been established. Rufen should be given under close supervision to patients with a history of upper gastrointestinal tract disease and only after consulting the **ADVERSE REACTIONS**.

In patients with active peptic ulcer and active rheumatoid arthritis, nonulcerogenic drugs, such as aspirin, should be attempted. If Rufen must be given, the patient should be under close supervision for signs of ulceration or gastrointestinal bleeding.

PRECAUTIONS: Blurred and/or diminished vision, scotomata, and/or changes in color vision have been reported. If developed, discontinue Rufen and administer an ophthalmologic examination.

Fluid retention and edema have been associated with Rufen; caution should be used in patients with a history of cardiac decompensation.

Rufen can inhibit platelet aggregation and prolong bleeding time. Use with caution in patients with intrinsic coagulation defects and those taking anticoagulants.

Patients should report signs or symptoms of gastrointestinal ulceration or bleeding, blurred vision or other eye symptoms, skin rash, weight gain or edema.

To avoid exacerbation of disease or adrenal insufficiency, patients on prolonged corticosteroid therapy should be tapered slowly when adding Rufen.

DRUG INTERACTION: Coumarin-type anticoagulants. The physician should be cautious when administering Rufen to patients on anticoagulants.

Aspirin. Concomitant use may decrease Rufen blood levels.

PREGNANCY AND NURSING MOTHERS: Rufen should not be taken during pregnancy nor by nursing mothers.

ADVERSE REACTIONS

Incidence greater than 1%

Gastrointestinal: The most frequent adverse reaction is gastrointestinal (4% to 16%). Includes nausea, epigastric pain, heartburn, diarrhea, abdominal distention, nausea and vomiting, indigestion, constipation, abdominal cramps or pain, fullness of GI tract (bloating, flatulence). **Central Nervous System:** dizziness, headache, nervousness. **Dermatologic:** rash* (including maculopapular type), pruritus. **Special Senses:** tinnitus. **Metabolic:** decreased appetite, edema, fluid retention. Fluid retention generally responds promptly to discontinuation (see **PRECAUTIONS**).

*Incidence 3% to 9%.

Incidence less than 1 in 100

Gastrointestinal: gastric or duodenal ulcer with bleeding and/or perforation, hemorrhage, melena. **Central Nervous System:** depression, insomnia. **Dermatologic:** vesiculobullous eruptions, urticaria, erythema multiforme. **Special Senses:** amblyopia (see **PRECAUTIONS**). **Hematologic:** leukopenia, decreased hemoglobin and hematocrit. **Cardiovascular:** congestive heart failure in patients with marginal cardiac function, elevated blood pressure.

Causal relationship unknown

Gastrointestinal: Hepatitis, jaundice, abnormal liver function. **Central Nervous System:** paresthesias, hallucinations, dream abnormalities. **Dermatologic:** eczema, Stevens-Johnson syndrome. **Special Senses:** conjunctivitis, diplopia, optic neuritis. **Hematologic:** hemolytic anemia, thrombocytopenia, granulocytopenia, bleeding episodes. **Allergic:** fever, serum sickness, lupus erythematosus syndrome. **Endocrine:** glycosuria, hypoglycemia. **Cardiovascular:** arrhythmia (sinus tachycardia, bradycardia, and palpitations). **Renal:** decreased creatinine clearance, polyuria, azotemia.

OVERDOSAGE: Acute overdosage, the stomach should be emptied. Rufen is acidic and excreted in the urine; alkaline diuresis may benefit.

DOSE AND ADMINISTRATION: Rheumatoid arthritis and osteoarthritis, including flares of chronic disease: Suggested dosage 400 mg t.i.d. or q.i.d. Mild to moderate pain: 400 mg every 4 to 6 hours necessary for relief of pain. Do not exceed 2,400 mg per day.

CAUTION: Federal law prohibits dispensing without prescription.

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Shreveport, Louisiana 71106

RUFEN® OFFERS A \$1.50 REBATE DIRECT TO YOUR PATIENTS ON EVERY BOTTLE OF 100 TABLETS OF RUFEN 400 MG.

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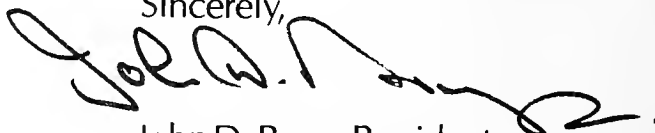
RUFEN (IBUPROFEN) IS BIOEQUIVALENT TO MOTRIN® (IBUPROFEN).*

I hope we've given you several good reasons to remember RUFEN the next time you prescribe ibuprofen.

If we haven't, or if you'd like to know more about Boots Pharmaceuticals or this program, please don't hesitate to drop me a line. Or call us directly at our toll-free number: (800) 551-8119. Louisiana residents, call (800) 282-8671.

To ensure that your patients receive the benefits of the Rufen program, be sure to specify "D.A.W.," "No Sub," or "Medically Necessary," as required by the laws of your state.

Sincerely,



John D. Bryer, President
Boots Pharmaceuticals, Inc.



Boots Pharmaceuticals, Inc.
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Pioneers in medicine for the family

OFFICIAL CALL HOUSE OF DELEGATES

HOUSE OF DELEGATES Meetings Scheduled

Notice to: Delegates, Alternate Delegates, Officials of the North Carolina Medical Society, and Presidents and Secretaries of county medical societies.

Sessions of the HOUSE OF DELEGATES will convene in the Cardinal Ballroom, Pinehurst Hotel, Pinehurst, North Carolina, at the following times:

Thursday, May 6, 1982—10:00 a.m.—Opening Session
Saturday, May 8, 1982— 2:00 p.m.—Second Session

A member of the CREDENTIALS COMMITTEE will be present at the Desk in the Hotel Lobby, Wednesday, May 5, 1982, 3:00 p.m. to 5 p.m., and Thursday, May 6, 1982, 8:30 a.m. to 10:00 a.m. to certify Delegates. Delegates are urged to bring their Credential Cards for presentation at the Registration Desk. Delegate Badges must be worn to be seated in the HOUSE OF DELEGATES.

REFERENCE COMMITTEE HEARINGS

Reference Committee hearings are scheduled to begin Thursday, May 6, 1982, at 2:00 p.m.

JOSEPHINE E. NEWELL, M.D., President
HENRY J. CARR, JR., M.D., Speaker
JACK HUGHES, M.D., Secretary
WILLIAM N. HILLIARD, Executive Director

Highlights of the Program

128th Annual Session
North Carolina Medical Society
May 6 - 9, 1982
Pinehurst Hotel
Pinehurst, North Carolina

WEDNESDAY, MAY 5, 1982

12:00 Noon-5:00 pm — REGISTRATION — (West Lobby)
1:00 pm-5:00 pm — SECTION ON PUBLIC HEALTH & EDUCATION — (Azalea Bar)

THURSDAY, MAY 6, 1982

8:00 am-5:00 pm — REGISTRATION — (West Lobby)
8:30 am-5:00 pm — EXHIBITS open — (North, South & Dogwood Rooms)
10:00 am — HOUSE OF DELEGATES — Opening Session — (Cardinal Ballroom)
12:00 Noon — LUNCH — SECTION ON OPHTHALMOLOGY — (Crystal Room)
2:00 pm-5:00 pm — Scientific Session — SECTION ON OPHTHALMOLOGY — (Crystal Room)
2:00 pm-5:00 pm — REFERENCE COMMITTEE HEARINGS — (Cardinal Ballroom, Azalea Bar, and Board Room)
3:00 pm-5:00 pm — SECTION ON UROLOGY — (Pine Room)
5:30 pm — SOCIAL HOUR — SECTION ON UROLOGY — (Pine Room)
6:00 pm — SOCIAL HOUR — Medical College of Virginia (MCV) — (Room #439)
7:00 pm — DINNER — Medical College of Virginia (MCV) — (Crystal Room)

FRIDAY, MAY 7, 1982

8:00 am-5:00 pm — REGISTRATION — (West Lobby)
8:30 am-5:00 pm — EXHIBITS open
8:30 am-9:00 am — CONJOINT SESSION — North Carolina Medical Society & North Carolina Division for Health Services — (Cardinal Ballroom)
9:00 am-11:00 am — SECTION ON ORTHOPAEDICS — (Pine Room)
9:00 am-12:00 Noon — FIRST GENERAL SESSION — (Surgical Session) — (Cardinal Ballroom)
9:00 am-1:00 pm — Commission for Health Services — (Board Room)

9:00 am-1:00 pm — Scientific Session — SECTION ON OTOLARYNGOLOGY & MAXILLOFACIAL SURGERY — (Banquet Room — Pinehurst Country Club)

9:00 am-5:00 pm — SECTION ON FAMILY PRACTICE — (Azalea Bar)

9:30 am-10:30 am — Executive Committee Meeting — N.C. Pediatric Society — (Room #129)

10:00 am-1:00 pm — North Carolina Society of Plastic, Maxillofacial & Reconstructive Surgeons — (Mid Pines Resort)

10:30 am — LIAISON COMMITTEE MEETING — N.C. Pediatric Society — (Crystal Room)

11:30 am — Business Session — SECTION ON EMERGENCY MEDICINE — (Pine Room)

12:00 Noon — LUNCH — N.C. Pediatric Society — (Crystal Room)

1:00 pm-6:00 pm — Scientific Session — SECTION ON EMERGENCY MEDICINE — (Pine Room)

2:00 pm-5:00 pm — Scientific Session — SECTION ON ALLERGY & IMMUNOLOGY — (Board Room)

2:00 pm-5:00 pm — Scientific Session — SECTION ON PEDIATRICS — (Crystal Room)

5:30 pm-6:30 pm — SOCIAL HOUR — BOWMAN GRAY — (Azalea Bar)

6:30 pm — SOCIAL HOUR — UNC — (West Porch)

6:30 pm — SOCIAL HOUR — DUKE Medical Alumni — (Banquet Room — Pinehurst Country Club)

6:30 pm-8:00 pm — EXHIBITORS' RECEPTION

SATURDAY, MAY 8, 1982

8:00 am-3:00 pm — REGISTRATION — (West Lobby)

8:00 am-12:00 Noon — Scientific Session — SECTION ON DERMATOLOGY — (Crystal Room)

8:00 am-12:00 Noon — Scientific Session — SECTION ON PATHOLOGY — (Resort Club — Pinehurst Country Club)

8:00 am-12:00 Noon — Scientific Session — SECTION ON NEUROLOGY & PSYCHIATRY — (Azalea Bar)

8:00 am-1:00 pm — Scientific Session — SECTION ON ANESTHESIOLOGY — (Pine Room)

9:00 am-12:00 Noon — Scientific Session — SECTION ON OBSTETRICS & GYNOCLOGY — (Board Room)

9:00 am-12:00 Noon — Scientific Session —
SECTION ON RADIOLOGY & NUCLEAR
MEDICINE — (Meeting House — Mid Pines
Club)

9:00 am-12:30 pm — SECOND GENERAL SESSION
— (Cardinal Ballroom)

12:00 Noon — PICNIC — SECTION ON DERMA-
TOLOGY — (West Porch)

1:00 pm — LUNCH — SECTION ON NEURO-
LOGICAL SURGERY — (Crystal Room)

2:00 pm-5:00 pm — Scientific Session — SECTION
ON NEUROLOGICAL SURGERY — (Crystal
Room)

2:00 pm — HOUSE OF DELEGATES — SECOND
SESSION — (Cardinal Ballroom)

6:30 pm-7:30 pm — PRESIDENT'S RECEPTION —
(Lower Lobby)

7:30 pm — PRESIDENT'S DINNER — (Cardinal
Ballroom)

9:00 pm — PRESIDENT'S BALL — (Cardinal
Ballroom)

SUNDAY, MAY 9, 1982

8:30 am — BREAKFAST — N.C. AMA Delegation
— (Crystal Room)

CONJOINT SESSION

Friday, May 7, 1982 Cardinal Ballroom
8:30 am-9:00 am

CONJOINT SESSION — North Carolina Medical
Society and North Carolina Division of Health
Services

GENERAL SESSIONS

First General Session

Friday, May 7, 1982 Cardinal Ballroom
9:00 am-12:00 Noon

Convene Session

Presiding: Josephine E. Newell, M.D., President, Raleigh
Invocation:

Surgical Session

Department of Surgery, Duke University Medical
Center, Durham

9:00 am — Opening Remarks: Ewald W. Busse,
M.D., Associate Provost and Dean, Medical and
Allied Health Education, Duke University
Medical Center

MODERATOR: David C. Sabiston, Jr., M.D.,
James B. Duke Professor and Chairman,
Department of Surgery, Duke University Medical
Center, Durham

9:05 am — ANNUAL HOOPER MEMORIAL
LECTURE, PARENTERAL HYPER-
ALIMENTATION IN THE MANAGEMENT
OF PATIENTS WITH TRAUMATIC INJURIES
George F. Sheldon, M.D., Professor of Surgery,
University of California at San Francisco and
Chief of the Trauma Service, San Francisco
General Hospital

10:00 am — MANAGEMENT OF POST-TRAUMATIC
PULMONARY INSUFFICIENCY
Joseph A. Moylan, M.D., Professor of Surgery
and Chief of the Trauma Service, Duke University
Medical Center

10:15 am — COFFEE BREAK

10:30 am — HEAD TRAUMA: THE IMPACT OF
MODERN IMAGING TECHNOLOGY UPON
NEUROSURGICAL MANAGEMENT

Richard S. Kramer, M.D., Associate in Neuro-
surgery, Duke University Medical Center

10:45 am — REPLANTATION OF UPPER
EXTREMITIES

James A. Nunley, II, M.D., Assistant Professor
of Orthopaedics, Duke University Medical Center

11:00 am — MANAGEMENT OF FACIAL INJURIES
Gregory S. Georgiade, M.D., Assistant Professor
of Surgery, Duke University Medical Center

11:15 am — MANAGEMENT OF TRAUMATIC
INJURIES OF THE HEART AND GREAT
VESSELS

J. Scott Rankin, M.D., Assistant Professor of
Surgery and Physiology, Duke University Medical
Center

11:30 am — PANEL DISCUSSION:

George F. Sheldon, MD, Chairman

Gregory S. Georgiade, M.D.

Richard S. Kramer, M.D.

Joseph A. Moylan, M.D.

James A. Nunley, II, M.D.

J. Scott Rankin, M.D.

12:00 Noon — ANNOUNCEMENTS

ADJOURN

(The Duke University School of Medicine, office of
Continuing Education certifies that this continuing
medical education activity meets the criteria for credit
in Category I of the Physician's Recognition Award of
the American Medical Association.)

Second General Session

Saturday, May 8, 1982 Cardinal Ballroom
9:00 am-12:30 pm

Convene Session

Presiding: John W. Foust, M.D., First Vice President
Charlotte

Medical Session

University of North Carolina, Department of Medicine, Chapel Hill

8:45 am — Opening Remarks: David A. Ontjes, M.D., Professor & Acting Chairman, Department of Medicine

Welcome: Stuart Bondurant, M.D., Dean, School of Medicine, University of North Carolina

Moderator: Joseph S. Pagano, M.D., Professor of Medicine & Director, Cancer Research Center

9:00 am — ENDOSCOPY IN THE MANAGEMENT OF PATIENTS WITH GASTROINTESTINAL CANCER

Eugene Bozyski, M.D., Professor of Medicine, Division of Digestive Diseases and Nutrition

9:40 am — CURABLE METASTATIC CANCER — SELECTION AND PROGNOSIS

Robert Capizzi, M.D., Professor of Medicine, Division of Hematology/Oncology, University of North Carolina, School of Medicine

10:20 am — COFFEE BREAK

10:40 am — NUTRITIONAL SUPPORT OF THE PATIENT WITH CANCER

William Heizer, M.D., Professor of Medicine, Division of Digestive Diseases and Nutrition, University of North Carolina, School of Medicine

11:20 am — PSYCHOLOGICAL ASPECTS OF CANCER CARE

Cheryl McCartney, M.D., Assistant Professor of Psychiatry, Adjunct Assistant Professor of Obstetrics and Gynecology, University of North Carolina, School of Medicine

12:00 Noon — ANNUAL ADDRESS OF THE PRESIDENT

Josephine E. Newell, M.D., President, Raleigh

12:30 pm — ANNOUNCEMENTS

ADJOURN

(The University of North Carolina School of Medicine, Office of Continuing Education certifies that this continuing medical education activity meets the criteria for credit in Category I of the Physicians' Recognition Award of the American Medical Association.)

WEDNESDAY, MAY 5, 1982

SECTION ON PUBLIC HEALTH & EDUCATION

Wednesday, May 5, 1982

1:30 pm-5:00 pm Azalea Bar

CHAIRMAN: Verna Y. Barefoot, M.D., New Bern

Scientific Session:

1:30 pm-2:15 pm — ROCKY MOUNTAIN SPOTTED FEVER

J.N. McCormack, M.D., Raleigh

2:15 pm-3:00pm — SCREENING FOR LEAD TOXICITY

Audrey Sayers, M.D., Black Mountain

3:00 pm-4:00 pm — AMBULATORY PEDIATRICS IN A HEALTH DEPARTMENT

Thomas Irons, M.D., New Bern

Business Session:

4:00 pm-5:00 pm — Election of Officers, Delegate and Alternate Delegate for 1982-83

THURSDAY, MAY 6, 1982

SECTION ON OPHTHALMOLOGY

Thursday, May 6, 1982

12:00 Noon-5:00 pm Crystal Room

CHAIRMAN: J. Lawrence Sippe, M.D., Charlotte

PROGRAM CHAIRMAN: Edward K. Isbey, Jr., M.D., Asheville

Scientific Session:

2:00 pm ARGON LASER TRABECULOPLASTY IN OPEN-ANGLE GLAUCOMA

L. Frank Cashwell, M.D., Winston-Salem

2:15 pm — LASER TRABECULAR THERAPY IN OPEN-ANGLE GLAUCOMA

David P. Perry, M.D., Durham

2:30 pm — MODIFIED PARKS PROCEDURE FOR V-PATTERN EXOTROPIAS BY INFERIOR OBLIQUE AND LATERAL RECTUS MUSCLE RECESIONS: THE PHOTOGRAPHY OF OPHTHALMIC SURGERY, WITH THE PHOTOGRAPHER THE SURGEON

E. Randolph Wilkerson, Jr., M.D., Charlotte

2:45 pm — CLINICAL PRESENTATIONS OF OPTIC DISC DRUSEN

Richard E. Sievers, M.D., Winston-Salem

3:00 pm — CORNEAL TRANSPLANTATION FOR SPONTANEOUS CORNEAL PERFORATION, TECHNIQUE AND RESULTS

Michael Cobo, M.D., Durham

3:15 pm — COFFEE BREAK

3:30 pm — POSTERIOR SCLERITIS PRESENTING AS AN ORBITAL MASS

J. Richard Marion, M.D., Winston-Salem

3:45 pm — EPISCLERAL AND ORBITAL PSEUDO-RHEUMATOID NODULES

Mark Ross, M.D., Chapel Hill

4:00 pm — CHOROIDAL MALIGNANT MELANOMA IN SIBLINGS

Kenneth B. Simons, M.D., Chapel Hill

4:15 pm — POSTERIOR CHAMBER IMPLANTS WITHOUT IRIDECTOMY

Paul J. Simel, M.D., Greensboro

4:30 pm — SECONDARY INTRAOCULAR LENS IMPLANTATION

Charles W. Tillett, M.D., Charlotte

4:45 pm — DIAGNOSTIC SIGNIFICANCE OF THE FLUORESCIN ANGIOGRAM IN DIABETICS

Donald P. Renaldo, M.D., Charlotte

Business Session:

Election of Officers, Delegate and Alternate Delegate for 1982-83

SECTION ON UROLOGY

Thursday, May 6, 1982

3:00 pm-5:00 pm Pine Room

CHAIRMAN: Donald T. Lucey, M.D., Raleigh

Scientific Session:

Presented by: David F. Paulson, M.D., Professor
& Chairman Department of Urology, Duke
University Medical Center, Durham
Lowell King, M.D., Director of Pediatric
Urology, Duke University Medical Center,
Durham

Business Session:

Election of Officers, Delegate and Alternate
Delegate for 1982-83

5:30 pm — SOCIAL HOUR — (Pine Room)

FRIDAY, MAY 7, 1982

SECTION ON FAMILY PRACTICE

Friday, May 7, 1982

8:30 am-5:00 pm Azalea Bar

CHAIRMAN: Hal M. Stuart, M.D., Elkin

PROGRAM CHAIRMAN: Robert G. Townsend, Jr.,
M.D., Raeford

8:30 am-12 Noon — Board of Directors meeting
North Carolina Academy of Family Physicians

Scientific Session:

2:00 pm-2:40 pm — OFFICE IMMUNOLOGY
Lyndon K. Jordan, M.D., F.A.A.F.P.,
Diplomate, American Board of Family Practice,
Former Director, Duke Family Practice Program,
Past President, NCAFP, private practice,
Smithfield

3:00 pm-3:40 pm — CURRENT CONCEPTS IN
THE TREATMENT OF ANGINA PECTORIS
Joe Ellis Gaddy, Jr., M.D., private practice,
Cardiology, Winston-Salem

4:00 pm-4:40 pm — HEALTH HAZARDS OF
IONIZING RADIATION
Michael F. Fleming, M.D., Assistant Professor of
Family Practice, University of North Carolina,
Chapel Hill

Business Session:

Election of Officers, Delegate and Alternate Delegate
for the year 1982-83

COMBINE MEETING SECTION ON ORTHOPAEDICS

and

SECTION ON PLASTIC AND RECONSTRUCTIVE SURGERY

Friday, May 7, 1982

9:00 am-11:00 am Pine Room

CHAIRMAN: Section on Orthopaedics — Richard N.
Wrenn, M.D., Charlotte

Section on Plastic and Reconstructive
Surgery — Andrew W. Walker, M.D.,
Charlotte

9:00 am — Business Meeting — N.C. Orthopaedic
Scientific Session — Combined Meeting — Section on
Orthopaedics and Section on
Plastic and Reconstructive
Surgery

Topic: COMPLEX LOWER EXTREMITY
TRAUMA PROBLEMS

MODERATOR: Paul P. Gwyn, M.D., Winston-
Salem

9:50 am — TREATMENT OF COMPOUND
TIBIAL FRACTURES

Steve Lovejoy, Charlotte

10:05 am — THE USE OF THE EXTERNAL
FIXATOR FOR UNSTABLE TIBIAL
FRACTURES

David Kingery, M.D., Charlotte

10:20 am — MYOCUTANEOUS FLAPS

William Frank Mullis, M.D., Charlotte

10:35 am — FREE FLAP TRANSFER TO THE
LOWER EXTREMITY

John Fagg, M.D., Winston-Salem

10:50 am — ADJOURN

SECTION ON OTOLARYNGOLOGY AND MAXILLOFACIAL SURGERY

Friday, May 7, 1982

9:00 am-1:00 pm Banquet Room
New Members Club, Pinehurst Country Club

CHAIRMAN: Walter R. Sabiston, M.D., Kinston
PROGRAM CHAIRMAN: W. Fred McGuirt, M.D.,
Winston-Salem

Scientific Session:

BRAINSTEM EVOKED RESPONSE AUDIO
METRY

Grady Thomas, M.D., Chapel Hill

EXTENDED NASAL CRYOTHERAPY

Paul Geniec, High Point

TUMOR IMMUNOLOGY

Duke University Staff - (to be announced)

FACE-LIFT SURGERY

Ellison Edwards, M.D., Charlotte

EVALUATION AND MANAGEMENT OF THE
ALLERGIC HEADACHE

John Foust, M.D., Charlotte

SINGER-BLOM PROCEDURE

Fred McGuirt, M.D., Winston-Salem

Business Session:

Election of Officers, Delegate and Alternate
Delegate for 1982-83

SECTION ON PEDIATRICS

Friday, May 7, 1982

9:30 am Executive Committee Meeting — Parlor
#129

10:30 am-5:00 pm Crystal Room
CHAIRMAN: David T. Tayloe, M.D., Washington

10:30 am — Liaison Committee Meeting — N.C.
Pediatric Society

12:00 Noon — Lunch — Liaison Committee

Scientific Session:

- 2:00 pm-2:45 pm — CLINICAL AIDS USEFUL IN CARING FOR ADOLESCENTS
Robert B. Shearin, M.D., F.A.A.P., Associate Professor of Pediatrics and Director, Division of Adolescent Medicine, Georgetown University Medical Center, Washington
- 2:45 pm-3:20 pm — COMMON MENSTRUAL DISORDERS IN ADOLESCENTS
Rosalina Vaz, M.D., Assistant Professor of Pediatrics, Adolescent Clinic, Bowman Gray School of Medicine
- 3:30 pm-3:50 pm — HERPES SIMPLEX INFECTIONS IN THE ADOLESCENT
Peggy McCarthy, M.H.A., Clinical Research Scientist, Burroughs Wellcome Company
- 3:50 pm-4:00 pm — BREAK
- 4:00 pm-4:20 pm — TALKING WITH TEEN-AGERS
Sam Yancy, M.D., F.A.A.P., Private Practice of Pediatrics, Durham
Director, Youth Clinic, Duke Medical Center
- 4:20 pm-5:00 pm — DISORDERS OF PUBERTY: TOO MUCH TOO SOON OR TOO LITTLE TOO LATE
Louis W. Underwood, M.D., F.A.A.P., Professor of Pediatrics, Endocrine Division, University of North Carolina School of Medicine

Business Session:

Election of Officers, Delegate and Alternate Delegate for 1982-83

SECTION ON EMERGENCY MEDICINE

Friday, May 7, 1982

- 11:30 am-5:00 pm Pine Room
CHAIRMAN: Daniel G. Sayers, M.D., Winston-Salem

Scientific Session:

- 11:20 am-12:00 Noon — Section Business Meeting
Election of Officers, Delegate and Alternate Delegate for 1982-83
- 12:00 Noon-1:00 pm — Board of Directors Meeting — N.C. ACEP LUNCH
- 1:00 pm-2:00 pm — General Meeting N.C. ACEP
- 2:00 pm-3:00 pm — DIAGNOSIS AND THERAPEUTICS TRICYCLIC OVERDOSE
Bryan L. Sink, M.D., Resident in Emergency Medicine, Charlotte Memorial Hospital, Charlotte
- 3:00 pm-4:00 pm — PROCEDURE EMERGENCY PACING OF THE HEART
Thomas Hankins, M.D., Resident in Emergency Medicine, Bowman Gray School of Medicine and N.C. Baptist Hospital, Winston-Salem
- 4:00 pm-5:00 pm — EMERGENCY MEDICAL SYSTEMS TRAINING OF PARAMEDICAL PERSONNEL
E. Jackson Allison, Jr., M.D., Associate Professor & Chairman, ECU Department of Emergency Medicine; and Sandra S. Landis, R.N., EMS Project Coordinator and Lecturer, ECU Department of Emergency Medicine

SECTION ON ALLERGY AND CLINICAL IMMUNOLOGY

Friday, May 7, 1982

- 2:00 pm-5:00 pm Board Room
CHAIRMAN: J.A. Bardelas, M.D., High Point
- 2:00 pm-2:30 pm — NEW DRUGS IN THE TREATMENT OF ASTHMA
John Klimas, M.D., Charlotte
- 2:30 pm-3:00 pm — FOOD ALLERGIES — CURRENT CONCEPTS
Hugh Sampson, M.D., Duke University Medical Center
- 3:30 pm-4:00 pm — STINGING INSECT ALLERGY UPDATE
J.S. Atwater, Jr., M.D., Asheville
- 4:00 pm-4:30 pm — USE OF TOPICAL STEROIDS IN ASTHMA AND ALLERGIC RHINITIS
J.A. Bardelas, M.D., High Point
- 4:30 pm-5:00 pm — BUSINESS MEETING, North Carolina Medical Society Section of Allergy in conjunction with the North Carolina Society of Allergy and Clinical Immunology

SATURDAY, MAY 8, 1982

SECTION ON PATHOLOGY

Saturday, May 8, 1982

- 8:00 am-12:30 pm Resort Club
Pinehurst Country Club
CHAIRMAN: J. Ron Edwards, M.D., Raleigh

Scientific Session:

- 8:00 am-8:30 am — Business Meeting I and Introduction
- 8:30 am-9:30 am — PATHOLOGY OF DRUG INDUCED AND TOXIC DISEASES OF THE CARDIOVASCULAR SYSTEM
Col. Hugh A. McAllister USA(MC) AFIP, Washington, DC
- 9:30 am-9:45 pm — BREAK
- 9:45 am-10:30 am — FORBUS LECTURE
- 10:30 am - 11:30 am — MINISEMINAR — IMMUNOPEROXIDASE, APPLICATIONS IN SURGICAL PATHOLOGY
E. Ted Ahl, M.D., Department of Pathology, Bowman Gray School of Medicine
Byron Croker, M.D., Department of Pathology, Duke University School of Medicine
- 11:30 am-12:30 pm — Business Meeting II

SECTION ON ANESTHESIOLOGY

Saturday, May 8, 1982

- 8:00 am-1:00 pm Pine Room
CHAIRMAN: J. Leroy King, M.D., Raleigh
- Scientific Session:
- 8:30 am — CALL TO ORDER
- 8:35 am-9:25 am — WHAT'S NEW IN OBSTETRICAL ANESTHESIA
Lloyd D. Redick, M.D., Professor of Anesthesiology, Duke Medical Center

9:30 am-10:10 am — CHLOROPROCAINE CONTROVERSY

Francis M. James, III, M.D., Professor of Anesthesiology, Bowman Gray School of Medicine, Chief of Obstetrical Anesthesia, Forsyth Medical Center

10:15 am-11:00 am — MEDICAL LEGAL ASPECTS OF OBSTETRICAL ANESTHESIA

David M. Dewan, M.D., Assistant Professor of Anesthesiology, Bowman Gray School of Medicine

11:00 am-11:45 am — QUESTIONS TO THE PANEL

11:45 am-12:00 Noon — COFFEE BREAK

12:00 Noon-1:00 pm — Business Meeting — North Carolina Society of Anesthesiologists — V.O. Roberson, M.D., President

SECTION ON NEUROLOGY & PSYCHIATRY

Saturday, May 8, 1982

9:00 am-12:00 Noon Azalea Bar

CHAIRMAN: Assed Meymandi, M.D., Fayetteville

Scientific Session:

9:00 am-9:45 am — WHAT YOU SHOULD KNOW ABOUT MEDICARE, MEDICAID AND OTHER THIRD PARTY PAYMENT

Joseph Russell, M.D., Carolina Clinic, Wilson

9:45 am-10:30 am — BORDERLINE PERSONALITY AND ATYPICAL PSYCHOSES — A CLINICIAN'S POINT OF VIEW

Eric Peterson, M.D., Highland Hospital, Asheville

10:30 am-10:45 am — BREAK

10:45 am-11:30 am — UPDATE: PSYCHOPHARMACOLOGY

Gordon Burnette, M.D., UNC Memorial Hospital, Chapel Hill

11:30 am-12:00 Noon — PANEL DISCUSSION: QUESTIONS AND ANSWERS

Business Session:

Election of Officers, Delegate and Alternate Delegate for 1982-83

SECTION ON DERMATOLOGY

Saturday, May 8, 1982

9:00 am-12:00 Noon Crystal Room

CHAIRMAN: Charles E. Cummings, M.D., Asheville

SECRETARY-TREASURER: R. Wade Markham, M.D., High Point

Scientific Session:

9:00 am-10:00 am — CURRENT FINANCIAL AND ECONOMIC CONDITIONS

Mr. John G. Medlin, Jr., President and Chief Executive Officer of Wachovia Corporation

10:00 am-12:00 Noon — FUTURE OF DERMATOLOGY and INTERESTING CASE STUDIES

Richard Dobson, M.D., Chief of the Department of Dermatology, South Carolina Medical School, Charleston, S.C.

Business Session:

Election of Officers, Delegate and Alternate Delegate for 1982-83

12:00 Noon — PICNIC — West Porch

SECTION ON OBSTETRICS & GYNOCLOGY

Saturday, May 8, 1982

9:00 am-12:00 Noon Board Room

CHAIRMAN: Talbot F. Parker, Jr., M.D., Goldsboro

Scientific Session:

UPDATE ON SENATE BILL 158, DEFINING THE BEGINNING OF LIFE

Robert G. Brame, M.D., Greenville

UPDATE ON NURSE-MIDWIFERY IN N.C., INCLUDING PLANNED HOME DELIVERIES

Robert G. Brame, M.D., Greenville

COMMITTEE ON MATERNAL HEALTH REPORT

Robert G. Brame, M.D., Greenville

N.C. MATERNAL MORTALITY COMMITTEE REPORT

W. Joseph May, M.D., Winston-Salem

REPORT ON LOCAL STUDY OF PERINATAL MORTALITY

W. Joseph May, M.D., Winston-Salem

STATEWIDE PERINATAL ADVISORY COUNCIL REPORT

Robert Dillard, M.D., Greenville

STANDARDS FOR SECONDARY CARE FACILITIES AS SUCH RELATES TO REGIONALIZATION OF PERINATAL CARE IN N.C.

Richard R. Nugent, M.D., Raleigh

A) PERINATAL CARE IN COUNTY HEALTH DEPARTMENT CLINICS AND COUNTY HOSPITALS AND CURRENT AND FUTURE FUNDING FOR SUCH

B) STATEWIDE MEDICAID FEE SCHEDULES RELATING TO OB/GYN IN N.C.

C) ANY OTHER MATTERS

Sarah T. Morrow, M.D., Secretary, Department of Human Resources

UPDATE ON AMBULATORY SURGERY AS RELATES TO OB/GYN IN N.C.

James E. Davis

Follow-up Report on Dr. Marion Johnson's Maternal AFT Studies

Business Session:

Election of Officers, Delegate and Alternate Delegate for 1982-83

COMBINED SECTION MEETING

of

SECTION ON RADIOLOGY

and

SECTION ON NUCLEAR MEDICINE

Saturday, May 8, 1982

9:00 am-12:00 Noon Meeting House

Mid Pine Club, Southern Pines

CHAIRMAN: Luther E. Barnhardt, Jr., M.D., Asheville (Radiology)

CHAIRMAN: William H. McCartney, M.D., Chapel Hill (Nuclear Medicine)

PROGRAM CHAIRMAN: Edward Coleman, M.D., Durham

Scientific Session:

MODERATOR: Edward Coleman, M.D.

9:00 am-9:30 am — CORRELATIVE PANCREATIC IMAGING

Neil Wolfman, M.D., Winston-Salem

9:30 am-10:00 am — PERCUTANEOUS ABSCESS DRAINAGE

Paul Jaques, M.D., Chapel Hill

10:00 am-10:30 am — TRANSLUMINAL ANGIO-PLASTY

Michael Weaver, M.D., Greenville

10:30 am-11:00 am — DISCUSSION/COFFEE BREAK

11:00 am-11:30 am — NUCLEAR CARDIOLOGY IN A RADIOLOGY PRACTICE

Robert Schaaf, M.D., Raleigh

11:30 am-12:00 Noon — CURRENT STATUS OF DIGITAL ANGIOGRAPHY

Kerry Ford, M.D., Durham

12:00 Noon-12:30 pm — OVERVIEW OF NUCLEAR MAGNETIC RESONANCE IMAGING

Ed Easton, M.D., Charlotte

Business Session:

Election of Officers, Delegate and Alternate Delegate for each Specialty Section for the year 1982-83

SECTION ON NEUROLOGICAL SURGERY

Saturday, May 8, 1982

1:00 pm-5:00 pm Crystal Room

CHAIRMAN: Robert E. Price, Jr., M.D., Durham

1:00 pm — Luncheon — Crystal Room

2:00 pm — Scientific Session

4:00 pm — Business Session

Election of Officers, Delegate and Alternate Delegate for 1982-83

NORTH CAROLINA SOCIETY

of

PLASTIC, MAXILLOFACIAL & RECONSTRUCTIVE SURGEONS

MID PINES RESORT

Friday, May 7, 1982

10:00 am-1:00 pm Meeting House
Mid Pines Club, Southern Pines

Scientific Session:

* Jerome E. Adamson, M.D., Professor, Plastic Surgery, Eastern Virginia Medical School

Kenneth L. Pickrell, M.D., Professor Emeritus, Duke University Medical Center

10:00 am-10:30 am — RHINOPLASTY, IMPORTANCE OF TIP RECONSTRUCTION

Jerome E. Adamson, M.D.

10:30 am-11:45 am — PANEL — POST RHINOPLASTY PROBLEMS

MODERATOR: Paul Gwyn, M.D.

Jerome E. Adamson, M.D.

Kenneth L. Pickrell, M.D.

Problem Cases Presented By Members

11:45 am-12:00 Noon — BREAK

12:00 Noon-1:00 pm — PANEL — THE DIFFICULT NOSE

MODERATOR: Paul Gwyn, M.D.

Jerome E. Adamson, M.D.

Kenneth L. Pickrell, M.D.

Problem Cases Presented By Members

Saturday, May 8, 1982

8:30 am-11:30 am — Annual Business Meeting

Andrew W. Walker, M.D., presiding

Special Reports by: Jerome E. Adamson, M.D.

* Sponsored by the American Society for Aesthetic Plastic Surgeons, Inc.

AUXILIARY

FIFTY-NINTH ANNUAL CONVENTION

of

NORTH CAROLINA

MEDICAL SOCIETY AUXILIARY

Thursday, May 6, 1982 — Saturday, May 8, 1982

Convention Headquarters:

Sheraton Convention Center, Southern Pines

Convention Committee:

Mrs. Frank W. Leak (Betty)

Mrs. H. Maxwell Morrison (Myrtis)

THURSDAY, MAY 6

9:00 am-4:00 pm — REGISTRATION — Sheraton Convention Center Lobby

10:00 am — Auxiliary President Reports to Medical Society House of Delegates, Pinehurst Hotel, Pinehurst

11:00 am-12:30 pm — AUXILIARY — Executive Committee — Room B

1:30 pm-3:30 pm — 1981-1982 BOARD OF DIRECTORS' MEETING — Room B

3:30 pm-4:30 pm — Treasurers' Workshop on Membership — State First Vice President, District Councilors, County Presidents/Presidents-Elect

FRIDAY, MAY 7

8:00 am-4:00 pm — REGISTRATION — Sheraton Convention Center Lobby

7:45 am — Breakfast meeting for District Councilors

8:00 am-9:00 am — Set-Up County Displays in Lobby

9:00 am — HOUSE OF DELEGATES — Room A & B

10:15 am — BREAK

10:30 am-12:00 Noon — ANNUAL MEETING — Room A & B

12:30 pm — LUNCHEON — COUNTRY CLUB OF N.C. — 1981-1982 President's Farewell

4:00 pm-5:30 pm — AWARDS RECEPTION — Room A

Dr. and Mrs. Hampton Hubbard

Dr. and Mrs. O. Raymond Hunt

SATURDAY, MAY 8

7:45 am-9:00 am — 1982-1983 BOARD OF DIRECTORS Breakfast Meeting

9:00 am-12:15 pm — THE 1982-1983 AUXILIARY PRESIDENT PRESENTS . . .

9:00 am-11:00 am — "FAMILIES COPING IN THE 80's; PREVENTING BURN-OUT, BREAK-DOWN AND DISINTEGRATION."

H. Stephen Glenn, Ph.D., Lexington, S.C.

11:15 am-12:15 pm — ESCAPES AND RELAXATIONS

Martha Funk, Winston-Salem

12:15 pm-1:00pm — SOCIAL HOUR

1:00 pm — 1982-1983 PRESIDENT'S LUNCHEON

An ounce of prevention... is worth a pound of cure.

Good advice? You know it is. As a doctor, you've seen what prevention can do for people. Prevention is an important part of staying healthy.

The same prevention can be applied to insurance . . . prevention against financial hardships caused by a covered sickness or injury that may keep you from your practice.

As a member of the North Carolina Medical Society, you are eligible to apply for disability income protection for younger doctors. This plan can provide you with regular monthly benefits.

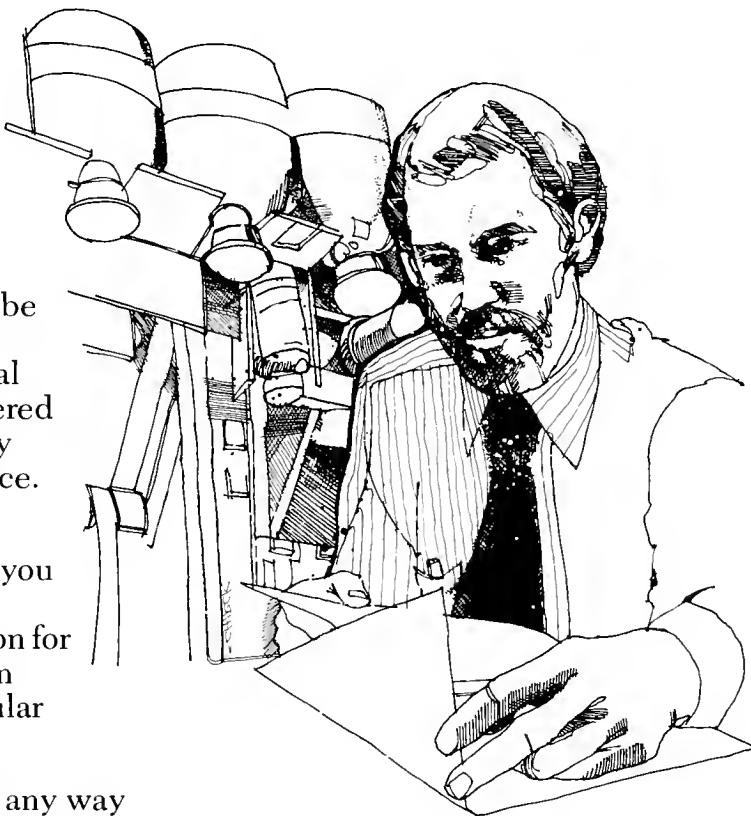
You can use your benefits any way you choose — to buy groceries, make house payments or provide for your children's education. If you are under the age of 55 and are active full time in your practice, simply fill out the coupon below and return it today. Mutual of Omaha, underwriter of this plan, will provide personal, courteous service in furnishing full details of coverage.



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Mutual of Omaha Insurance Company
Home Office: Omaha, Nebraska



Mutual of Omaha Insurance Company
Mutual of Omaha Plaza
Omaha, Nebraska 68175

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Fight cancer with your bare hands.

The best way to guard against breast cancer is right in your hands. It's called breast self-examination.

You see, changes are continuously taking place in your body. That's why a monthly breast self-examination is so important. As you become familiar with how your breasts feel, you'll be better able to notice changes. Any change, like a lump, should send you to the doctor promptly. Fortunately, most lumps are benign, but finding a cancer at an early stage greatly increases the chance of survival.

So ask your doctor to teach you breast self-examination. And while you're at it, ask him about mammography—a low-dose breast x-ray that can detect a cancer even before the most experienced doctor can find it.

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American Cancer Society

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*Based on review of PDR for Nonprescription Drugs 1981 and Handbook of Nonprescription Drugs, 6th ed 1979



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bulk, weight and water content, and to accelerate intestinal transit rate. Bran fiber, in contrast to some other laxative agents, is non-irritating and non-habituating. It is effective in simple constipation, that associated with hemorrhoids, diverticulitis, irritable bowel syndrome.



BranLax preferred by many patients over Metamucil in a clinical trial*

In a recent clinical evaluation comparing BranLax and Metamucil®, data were compiled on two groups. One was the total study population, and the other was composed of those who use or had previously used Metamucil.

Among the Metamucil users who expressed a preference, 77.8% (14/18)* preferred BranLax overall, effectiveness of BranLax was favored by 83.3% (10/12),* taste was preferred by 72.2% (13/18)† and the convenience of preparing BranLax was favored by 71.4% (10/14)†.



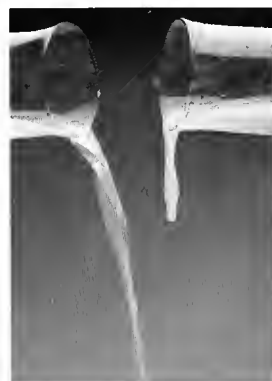
Among the general study population who expressed a preference, 59.6% (31/52)† preferred BranLax overall, effectiveness of BranLax was favored by 57.6% (19/33),† taste was preferred by 58.8% (30/51)† and convenience of preparing BranLax was favored by 62.5% (20/32).†

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the laxative that tastes as good as it works

¹Kitt, D.P. and Meisner, P.: How to manage constipation with a high-fiber diet, *Geriatrics* 34:33-40, Feb. 1979. Statistically significant at the .05 level. While this difference is not statistically significant, there was a definite directional superiority in favor of BranLax.

No single leading medication puts together relief for more cold symptoms

Maximum recommended 4-hour therapeutic doses for effective symptom control

- 60 mg pseudoephedrine HCl for nasal, sinus congestion
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- 1000 mg acetaminophen for headache, body aches, fever
- 20 mg dextromethorphan HBr for cough

More effective overall than many other widely used preparations

Many products lack ingredients in the decongestant, analgesic-antipyretic, antihistamine and/or antitussive categories, and cannot provide the range of relief that is possible with EXTRAN/DM.

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Capsules/Tablets: Each capsule/tablet contains 500 mg acetaminophen, 30 mg pseudoephedrine HCl, 2 mg chlorpheniramine maleate, 10 mg dextromethorphan HBr.

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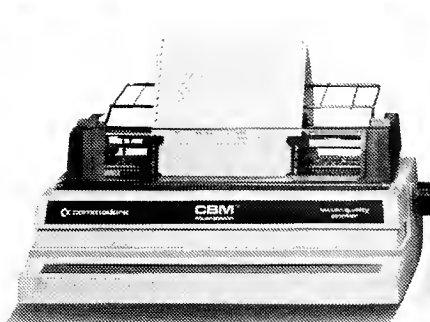
Commodore's Medical Accounting System (MAS)¹, for example, can provide you with a fast, flexible accounting and bookkeeping system that's as easy to use as it is cost effective. Automating your receivables, invoicing, aging of payables, and revenue analyses. MAS can also generate end-of-the-month "Superbills" as well as standard insurance and Medicare forms. And it gives you a thorough overview of your office activities through a series of reports ranging from diagnostics to referrals.

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Mandala Center is a JCAH accredited, private psychiatric hospital that specializes in the treatment of psychiatric illness, drug addiction, and alcoholism. The hospital was established in 1972 and is founded upon an interdisciplinary treatment approach. The 75-bed facility is located in Winston-Salem, NC, on a 15-acre site, and offers a full range of therapeutic modalities. Under medical supervision, the treatment team consists of psychiatrists, psychologists, pastoral counselors, social workers, psychiatric nurses, mental health workers and activities therapists. General medical care and special medical problems are provided for by the consulting staff.

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James Mattox, M.D.
Ali Jarrahi, M.D.
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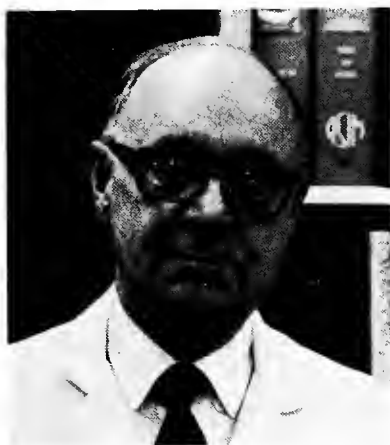
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Richard V. Woodard, Administrator

Towards Wholeness

"THE PHYSICIAN IS A DECISION MAKER, AND ALMOST EVERY DECISION HE MAKES COSTS OR SAVES MONEY."

—Dr. William Felts, Past President,
American Society of Internal Medicine



More and more physicians today are beginning to realize the extent of the economic influence they have, and are finding ways of holding costs down.

A number of studies show that the more physicians *know* about costs, the more they try to *reduce* them.* And this reduction can be done without reducing the quality of care to the patient.

How are they doing this? As a start they have become thoroughly familiar with the costs they incur on behalf of their patients. They know how much an X-ray costs, how much their hospital charges for routine lab tests. They're requesting copies of patients' hospital bills. And asking their hospitals to print the charges for diagnostic tests right on the order sheet.

What else are physicians doing? Minimizing their patients' hospital stays, whenever possible. Reevaluating routine admissions procedures. Questioning the real need of the diagnostic tests they order for their patients. Avoiding duplicate testing. Trying to discourage their patients' demands for unnecessary medication, treatment or hospitalization. Compiling daily logs of their medical decisions and what they cost. And more.

More physicians today realize what a tough problem we're all faced with. They know this is a challenge for medicine. And that physicians are in the best position to deal with and solve the problem.

*PATIENT CARE Magazine—Outlook 1977, "Face-Off: Cost Containment vs. Chaos," January 1, 1977

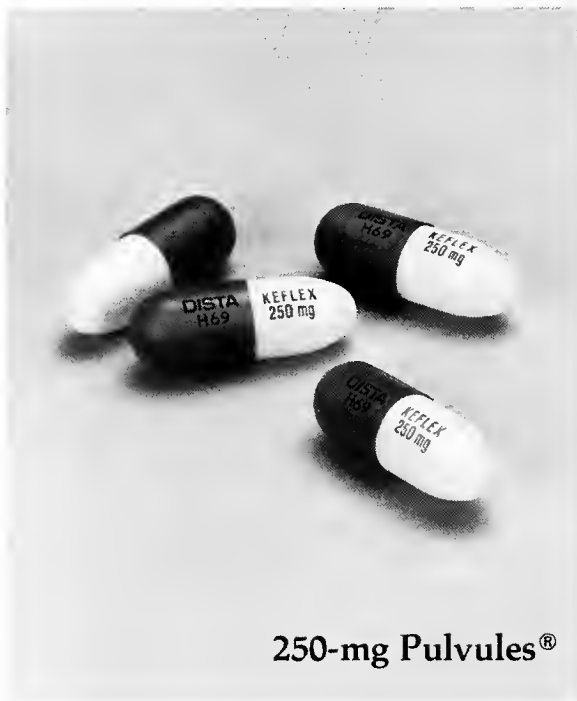
Lyle CB, et al. "Practice habits in a group of eight internists," ANNALS OF INTERNAL MEDICINE 84 (May 1976), 594-601.

Schroeder SA, et al. "Use of laboratory tests and pharmaceuticals: variation among physicians and effect of cost audit on subsequent use," JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION 225 (Aug 20, 1973), 969-73.



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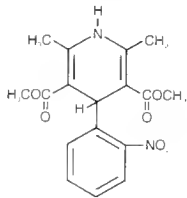
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*Pfizer Laboratories
Announces*

**THE FIRST ORAL
CALCIUM CHANNEL
BLOCKER
FOR THE
MANAGEMENT OF
ANGINA PECTORIS**

NEW
PROCARDIA[®]
(NIFEDIPINE) *Capsules 10 mg*

DESCRIPTION: PROCARDIA (nifedipine) is an antianginal drug belonging to a new class of pharmacological agents, the calcium channel blockers. Nifedipine is 3,5-pyridinedicarboxylic acid, 1,4-dihydro-2,6-dimethyl-4-(2-nitrophenyl)-, dimethyl ester, $C_{17}H_{18}N_2O_6$, and has the structural formula:



Nifedipine is a yellow crystalline substance, practically insoluble in water but soluble in ethanol. It has a molecular weight of 346.3. PROCARDIA CAPSULES are formulated as soft gelatin capsules for oral administration each containing 10 mg nifedipine.

CLINICAL PHARMACOLOGY: PROCARDIA (nifedipine) is a calcium ion influx inhibitor (slow channel blocker or calcium ion antagonist) and inhibits the transmembrane influx of calcium ions into cardiac muscle and smooth muscle. The contractile processes of cardiac muscle and vascular smooth muscle are dependent upon the movement of extracellular calcium ions into these cells through specific ion channels. PROCARDIA selectively inhibits calcium ion influx across the cell membrane of cardiac muscle and vascular smooth muscle without changing serum calcium concentrations.

Mechanism of Action: The precise means by which this inhibition relieves angina has not been fully determined, but includes at least the following two mechanisms:

1) **Relaxation and prevention of coronary artery spasm:** PROCARDIA dilates the main coronary arteries and coronary arterioles, both in normal and ischemic regions, and is a potent inhibitor of coronary artery spasm, whether spontaneous or ergonovine-induced. This property increases myocardial oxygen delivery in patients with coronary artery spasm, and is responsible for the effectiveness of PROCARDIA in vasospastic (Prinzmetal's or variant) angina. Whether this effect plays any role in classical angina is not clear, but studies of exercise tolerance have not shown an increase in the maximum exercise rate-pressure product, a widely accepted measure of oxygen utilization. This suggests that, in general, relief of spasm or dilation of coronary arteries is not an important factor in classical angina.

2) **Reduction of oxygen utilization:** PROCARDIA regularly reduces arterial pressure at rest and at a given level of exercise by dilating peripheral arterioles and reducing the total peripheral resistance (afterload) against which the heart works. This unloading of the heart reduces myocardial energy consumption and oxygen requirements and probably accounts for the effectiveness of PROCARDIA in chronic stable angina.

Pharmacokinetics and Metabolism: PROCARDIA is rapidly and fully absorbed after oral administration. The drug is detectable in serum 10 minutes after oral administration, and peak blood levels occur in approximately 30 minutes. It is highly bound by serum proteins. PROCARDIA is extensively converted to inactive metabolites and approximately 80% of PROCARDIA and metabolites are eliminated via the kidneys. The half-life of nifedipine in plasma is approximately two hours. There is no information on the effects of renal or hepatic impairment on excretion or metabolism of PROCARDIA.

Hemodynamics: Like other slow channel blockers, PROCARDIA exerts a negative inotropic effect on isolated myocardial tissue. This is rarely, if ever, seen in intact animals or man, probably because of reflex responses to its vasodilating effects. In man, PROCARDIA causes decreased peripheral vascular resistance and a fall in systolic and diastolic pressure, usually modest (5–10 mm Hg systolic), but sometimes larger. There is usually a small increase in heart rate, a reflex response to vasodilation. Measurements of cardiac function in patients with normal ventricular function have generally found a small increase in cardiac index without major effects on ejection fraction, left ventricular end diastolic pressure (LVDP) or volume (LVEDV). In patients with impaired ventricular function, most acute studies have shown some increase in ejection fraction and reduction in left ventricular filling pressure.

Electrophysiologic Effects: Although, like other members of its class, PROCARDIA decreases sinoatrial node function and atrioventricular conduction in isolated myocardial preparations, such effects have not been seen in studies in intact animals or in man. In formal electrophysiologic studies, predominantly in patients with normal conduction systems, PROCARDIA has had no tendency to prolong atrioventricular conduction, prolong sinus node recovery time, or slow sinus rate.

INDICATIONS AND USAGE: 1. **Vasospastic Angina:** PROCARDIA (nifedipine) is indicated for the management of vasospastic angina confirmed by any of the following criteria: 1) classical pattern of angina at rest accompanied by ST segment elevation, 2) angina or coronary artery spasm provoked by ergonovine or 3) angiographically demonstrated coronary artery spasm. In those patients who have had angiography, the presence of significant fixed obstructive disease is not incompatible with the diagnosis of vasospastic angina, provided that the above criteria are satisfied. PROCARDIA may also be used where the clinical presentation suggests a possible vasospastic component but where vasospasm has not been confirmed, e.g., where pain has a variable threshold on exertion or in unstable angina where electrocardiographic findings are compatible with intermittent vasospasm, or when angina is refractory to nitrates and/or adequate doses of beta blockers.

2. **Chronic Stable Angina (Classical Effort-Associated Angina):** PROCARDIA is indicated for the management of chronic stable angina (effort-associated angina) without evidence of vasospasm in patients who remain symptomatic despite adequate doses of beta blockers and/or organic nitrates or who cannot tolerate those agents.

In chronic stable angina (effort-associated angina) PROCARDIA has been effective in controlled trials of up to eight weeks duration in reducing angina frequency and increasing exercise tolerance, but confirmation of sustained effectiveness and evaluation of long-term safety in these patients are incomplete.

Controlled studies in small numbers of patients suggest concomitant use of PROCARDIA and beta-blocking agents may be beneficial in patients with chronic stable angina, but available information is not sufficient to predict with confidence the effects of concurrent treatment, especially in patients with compromised left ventricular function or cardiac conduction abnormalities. When introducing such concomitant therapy, care must be taken to monitor blood pressure since severe hypotension can occur from the combined effects of the drugs. See Warnings.

CONTRAINDICATIONS: Known hypersensitivity reaction to PROCARDIA.

WARNINGS: Excessive Hypotension: Although in most patients, the hypotensive effect of PROCARDIA is modest and well tolerated, occasional patients have had excessive and poorly tolerated hypotension. These responses have usually occurred during initial titration or at the time of subsequent upward dosage adjustment, and may be more likely in patients on concomitant beta blockers.

Increased Angina Beta Blocker Withdrawal: Occasional patients have developed well documented increased frequency, duration or severity of angina on starting PROCARDIA or at the time of dosage increases. The mechanism of this response is not established but could result from decreased coronary perfusion associated with decreased diastolic pressure with increased heart rate, or from increased demand resulting from increased heart rate alone.

Patients recently withdrawn from beta blockers may develop a withdrawal syndrome with increased angina, probably related to increased sensitivity to catecholamines. Initiation of PROCARDIA treatment will not prevent this occurrence and might be expected to exacerbate it by provoking reflex catecholamine release. There have been occasional reports of increased angina in a setting of beta blocker withdrawal and PROCARDIA initiation. It is important to taper beta blockers if possible, rather than stopping them abruptly before beginning PROCARDIA.

Congestive Heart Failure: Rarely, patients usually receiving a beta blocker have developed heart failure after beginning PROCARDIA. Patients with tight aortic stenosis may be at greater risk for such an event, as the unloading effect of PROCARDIA would be expected to be of less benefit to these patients, owing to their fixed impedance to flow across the aortic valve.

PRECAUTIONS: General: Hypotension: Because PROCARDIA decreases peripheral vascular resistance, careful monitoring of blood pressure during the initial administration and titration of PROCARDIA is suggested. Close observation is especially recommended for patients already taking medications that are known to lower blood pressure. See Warnings.

Peripheral edema: Mild to moderate peripheral edema, typically associated with arterial vasodilation and not due to left ventricular dysfunction, occurs in about one in ten patients treated with PROCARDIA. This edema occurs primarily in the lower extremities and usually responds to

should be taken to differentiate this peripheral edema from the effects of increasing left ventricular dysfunction.

Drug Interactions: Beta-adrenergic blocking agents: See Indications and Warnings. Experience in over 1400 patients in a non-comparative clinical trial has shown that concomitant administration of PROCARDIA and beta-blocking agents is usually well tolerated, but there have been occasional reports suggesting that the combination may increase the likelihood of congestive heart failure, severe hypotension or exacerbation of angina.

Long-acting nitrates: PROCARDIA may be safely co-administered with nitrates, but there have been no controlled studies to evaluate the antianginal effectiveness of this combination.

Carcinogenesis, mutagenesis, impairment of fertility: Nifedipine was administered orally for two years and was not shown to be carcinogenic. When given to rats prior to breeding, nifedipine caused reduced fertility at a dose approximately 30 times the maximum recommended human dose. In vivo mutagenicity studies were negative.

Pregnancy: Pregnancy category C. Nifedipine has been shown to be teratogenic in rats given in doses 30 times the maximum recommended human dose. Nifedipine was embryotoxic (increased fetal resorptions, decreased fetal weight, increased stunted forms, increased deaths, decreased neonatal survival) in rats, mice and rabbits at doses of from 3 to 10 times the maximum recommended human dose. In pregnant monkeys, doses 2/3 and twice the maximum recommended human dose resulted in small placentas and underdeveloped chorionioles. In rats, doses three times the maximum human dose and higher caused prolongation of pregnancy. There are no adequate and well-controlled studies in pregnant women. PROCARDIA should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

ADVERSE REACTIONS: In multiple-dose U.S. and foreign-controlled studies in which adverse reactions were reported spontaneously, adverse effects were frequent but generally not severe and rarely required discontinuation of therapy or dosage adjustment. Most were expected consequences of the vasodilator effects of PROCARDIA.

Adverse Effect	PROCARDIA (%) (N = 226)	Placebo (%) (N = 226)
Dizziness, light-headedness, giddiness	27	15
Flushing, heat sensation	25	8
Headache	23	20
Weakness	12	10
Nausea, heartburn	11	8
Muscle cramps, tremor	8	3
Peripheral edema	7	1
Nervousness, mood changes	7	4
Palpitation	7	5
Dyspnea, cough, wheezing	6	3
Nasal congestion, sore throat	6	3

There is also a large uncontrolled experience in over 2100 patients in the United States, and the patients had vasospastic or resistant angina pectoris, and about half had concomitant treatment with beta-adrenergic blocking agents. The most common adverse events were those seen in the controlled trials, with dizziness or light-headedness, peripheral edema, nausea, weakness, headache and flushing each occurring in about 10% of patients, transient hypotension in about 5%, palpitation in about 2% and syncope in about 0.5%. Syncopal episodes did not occur with reduction in the dose of PROCARDIA or concomitant antianginal medication. Very rarely, introduction of PROCARDIA therapy was associated with an increase in anginal pain, possibly due to associated hypotension.

Several of these side effects appear to be dose related. Peripheral edema occurred in about one in 25 patients at doses less than 60 mg per day and in about one patient in eight at 120 mg per day or more. Transient hypotension, generally of mild to moderate severity and seldom requiring discontinuation of therapy, occurred in one of 50 patients at less than 60 mg per day and in about 20 patients at 120 mg per day or more.

In addition, 2% or fewer of patients reported the following: Respiratory: Nasal and oral congestion, shortness of breath. Gastrointestinal: Diarrhea, constipation, cramps, flatulence. Musculoskeletal: Inflammation, joint stiffness, muscle cramps. CNS: Shakiness, nervousness, dizziness, sleep disturbances, blurred vision, difficulties in balance. Other: Dermatitis, pruritus, urticaria, fever, sweating, chills, sexual difficulties.

In addition, more serious adverse events were observed, not readily distinguishable from the natural history of the disease in these patients. It remains possible, however, that some or most of these events were drug related. Myocardial infarction occurred in about 4% of patients, congestive heart failure or pulmonary edema in about 2%. Ventricular arrhythmias or conduction disturbances each occurred in fewer than 0.5% of patients.

In a subgroup of over 1000 patients receiving PROCARDIA with concomitant beta blocker therapy, the pattern and incidence of adverse experiences was not different from that of the PROCARDIA treated patients (see Precautions).

In a subgroup of patients with a diagnosis of congestive heart failure as well as angina, dizziness or light-headedness, peripheral edema, headache or flushing each occurred in one in 10 patients. Hypotension occurred in about one in 20 patients. Syncope occurred in approximately one patient in 250. Myocardial infarction or symptoms of congestive heart failure each occurred in about one patient in 15. Atrial or ventricular dysrhythmias each occurred in about one patient in 150.

Laboratory tests: Rare, mild to moderate, transient elevations of enzymes such as alkaline phosphatase, CK, LDH, SGOT, and SGPT have been noted, and a single incident of significantly elevated transaminases and alkaline phosphatase was seen in a patient with a history of bladder disease after about eleven months of nifedipine therapy. The relationship to PROCARDIA therapy is uncertain. These laboratory abnormalities have already been associated with clinical symptoms. Cholestasis, possibly due to PROCARDIA therapy, has been reported twice in the extensive world literature.

OVERDOSAGE: Although there is no well documented experience with PROCARDIA overdose, available data suggest that gross overdose could result in excessive peripheral vasodilation with subsequent marked and probably prolonged systemic hypotension. Clinically significant hypotension due to PROCARDIA overdose calls for active cardiovascular support including monitoring of cardiac and respiratory function, elevation of extremities, and attention to circulating fluid volume and urine output. A vasoconstrictor (such as norepinephrine) may be helpful in restoring vascular tone and blood pressure, provided that there is no contraindication to its use. Clearance of PROCARDIA would be expected to be prolonged in patients with impaired renal function. Since PROCARDIA is highly protein-bound, dialysis is not likely to be of benefit.

DOSE AND ADMINISTRATION: The dosage of PROCARDIA needed to suppress angina and that can be tolerated by the patient must be established by titration. Excessive doses can result in hypotension.

The starting dose is one 10 mg capsule, swallowed whole, 3 times/day. The usual effective range is 10–20 mg three times daily. Some patients, especially those with evidence of coronary artery spasm, respond only to higher doses, more frequent administration, or both. In such patients, doses of 20–30 mg three or four times daily may be effective. Doses above 120 mg are rarely necessary. More than 180 mg per day is not recommended.

In most cases, PROCARDIA titration should proceed over a 7–14 day period so that the physician can assess the response to each dose level and monitor the blood pressure before proceeding to higher doses.

If symptoms so warrant, titration may proceed more rapidly provided that the patient is assessed frequently. Based on the patient's physical activity level, attack frequency, and sublingual nitroglycerin consumption, the dose of PROCARDIA may be increased from 10 mg t.i.d. to 20 mg t.i.d. and then to 30 mg t.i.d. over a three-day period.

In hospitalized patients under close observation, the dose may be increased in 10 mg increments over four to six-hour periods as required to control pain and arrhythmias due to ischemia. Single doses should rarely exceed 30 mg.

No "rebound effect" has been observed upon discontinuation of PROCARDIA. However, if continuation of PROCARDIA is necessary, sound clinical practice suggests that the dose should be decreased gradually with close physician supervision.

Co-Administration with Other Antianginal Drugs: Sublingual nitroglycerin may be taken as required for the control of acute manifestations of angina, particularly during PROCARDIA titration. See Precautions. Drug Interactions for information on co-administration of PROCARDIA with beta blockers or long-acting nitrates.

HOW SUPPLIED: Each orange, soft gelatin PROCARDIA Capsule contains 10 mg of nifedipine. PROCARDIA Capsules are supplied in amber glass bottles of 100 capsules (NDC 0069-2600-1).

The capsules should be protected from light and moisture and stored at controlled room temperature 59° to 77°F (15° to 25°C) in the manufacturer's original container.

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Accuracy in Diagnosis and Sizing Abdominal Aortic Aneurysm

Daniel Domjan, M.D., Francis Robicsek, M.D., Harry K. Daugherty, M.D., Joseph W. Cook, M.D., Jay G. Selle, M.D., and Philip J. Hess, M.D.

ABSTRACT The value of different diagnostic studies in patients with abdominal aortic aneurysms was studied in 623 cases. Physical examination, abdominal x-rays and angiography were done in all patients, while ultrasound examination and computerized tomographic (CT) scanning were performed in our last 60 cases. Physical examination and abdominal x-rays were least accurate in defining abdominal aortic aneurysms. Angiography and ultrasound exam were 98% accurate in identifying the lesion, but aneurysm size was more accurately determined with ultrasound. CT scan was 100% accurate in diagnosing the lesion and estimating its size.

MOST patients with abdominal aortic aneurysm are asymptomatic, though some notice a pulsating mass. The majority of cases are recognized during routine physical examination. Other methods of assessing abdominal aortic aneurysms include anteroposterior and lateral x-rays, tomograms, aortography, ultrasound, radionuclide angiography and computed tomography.¹

Until the advent of ultrasound, angiography was the accepted technique for diagnosing abdominal aortic aneurysms. In recent years angiography has been limited to specific indications, such as the definition of renal or peripheral vascular disease.²

In 1971 we reported on the relative merits of physical examination, abdominal x-rays, and aortography in the diagnosis of 218 patients with proven abdominal aortic aneurysm.³ Several specific diagnostic angiographic signs were also described that improved the accuracy of angiographic diagnosis of the presence of

abdominal aortic aneurysm to 98%. These signs include:

1. *Hesitation* in the passage of contrast material through a localized segment of abdominal aorta.
2. *Localized irregularity* of an otherwise normal aorta.
3. *Absence of branches* between the renal artery and the aortic bifurcation.
4. *Sharp angulation* of the aorta.
5. *Straight line* pattern in a localized segment of an otherwise heavily arteriosclerotic aorta.
6. *Absence of tapering* of the aorta at its distal portion.

Since 1971 we have resected abdominal aneurysms in 623 additional patients, 60 of whom were also studied with ultrasound and CT scan. Since the key prognostic factor in an abdominal aortic aneurysm is its size, estimates of aneurysm size with the various diagnostic tests were compared to measurements at surgery.

The findings reported in 1971 have been confirmed in our experience with abdominal aortic aneurysms over the past 10 years. We found that physical exam alone was nearly 70% accurate in predicting the presence of abdominal aortic

aneurysm. There was, however, a 15% rate of false positive diagnosis, attributable either to tortuosity of the aorta or to retroperitoneal tumors. We also found that estimates of aneurysm size were grossly inaccurate in obese patients.

Conventional abdominal radiograms predicted the presence of the aneurysm in nearly 70% of patients (Figure 1). When curvilinear calcifications outlined both margins of the aneurysm, estimation of aneurysm size was fairly accurate. Such calcifications were present, however, in only 55% of the cases. Angiography, interpreted with the aid of the secondary signs listed above, has remained 98% diagnostic for the presence of the lesion. It has the disadvantage of being invasive and expensive but the additional data provided has been crucial in some cases. Although renal arterial involvement with abdominal aneurysm is rare,⁴ it was found in 5% of this series. The angiogram has been useful in outlining the anatomy of accessory renal arteries and the presence of renal artery stenosis.⁵ Absence or occlusion of the superior mesenteric artery was noted in four of our cases, reimplantation of the inferior mesenteric artery averting

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Methods of Diagnosis of Abdominal Aortic Aneurysm

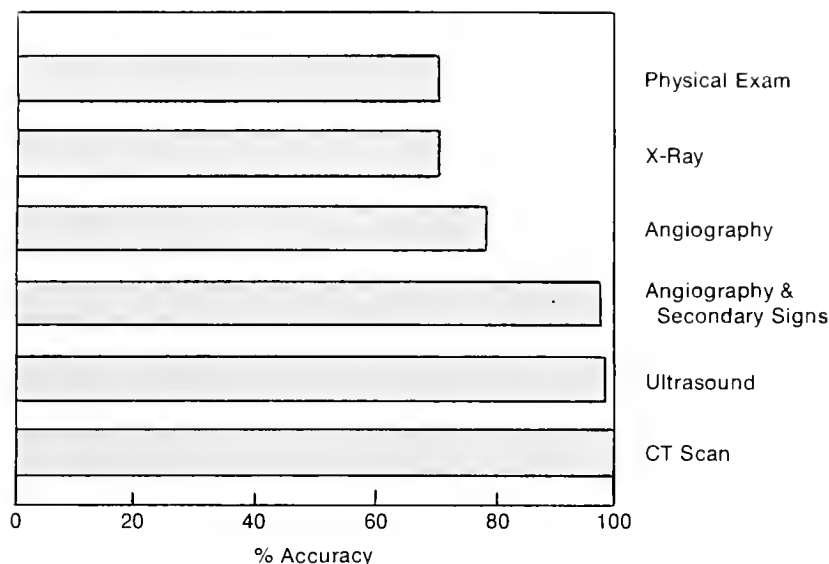


Figure 1

the potential disaster of massive bowel necrosis. Peripheral vascular disease is easily demonstrated on the angiogram and appropriate action planned rather than necessitating further dissection at surgery.

The advent of ultrasound has been a great advance in the diagnosis of abdominal aortic aneurysms. It is a non-invasive, relatively inexpensive and highly accurate study which demonstrates the presence and the size of the aneurysm in nearly 100% of cases (Figure 1). Its only limitation is the presence of bowel gas and barium that can interfere. In our 60 cases, interference prevented diagnosis in only one instance. Prediction of aneurysm size was accurate to within 1 cm (Figure 2).

CT scanning has been as accurate (virtually 100%) as ultrasonic examination and has the advantage of requiring no preparation (Figure 1). The study is not affected by bowel gas. The CT scan, however, is three times as costly as ultrasound and there is some exposure to radiation.

Since ultrasound is less costly, more easily available and provides similar information, CT scanning is unnecessary for the diagnosis of abdominal aortic aneurysms unless

Methods of Estimation of Aneurysm Size

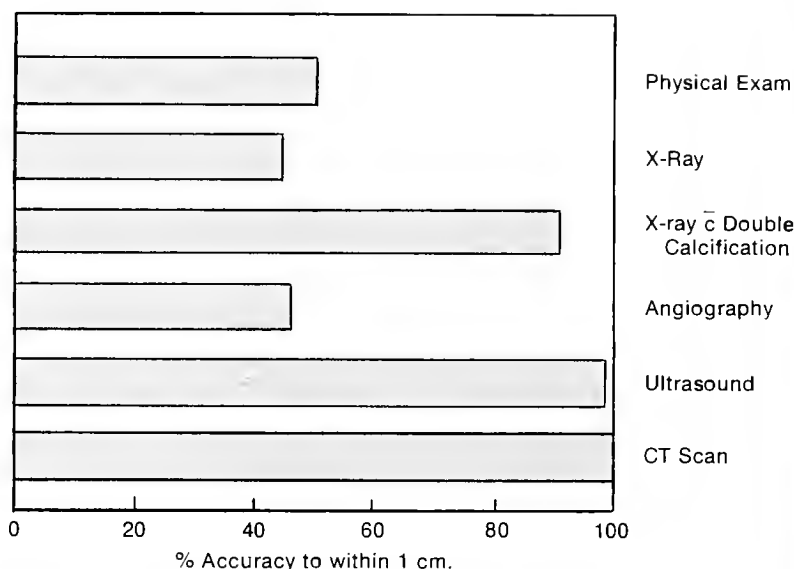


Figure 2

the ultrasonic study is technically unsatisfactory.

If the diagnosis of aneurysm of the abdominal aorta cannot be made with absolute certainty with physical and conventional radiographic examination, it should be reached with ultrasound, which is also a reliable screening test in all cases where palpatory, auscultatory and x-ray signs are absent. We further recommend that even when the diagnosis is established with certainty, the extent of the lesion, the status of arterial runoff, and the condition of the visceral arteries should be determined by angiography in every case of unruptured aneurysm of the abdominal aorta.

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PARACELSUS [1493?-1541]

If the physician is to understand the correct meaning of health, he must know that there are more than a hundred, indeed more than a thousand, kinds of stomach; consequently, if you gather a thousand persons, each of them will have a different kind of digestion, each unlike the others.

Three Books on Surgery, Bk. III, Foreword (tr. by Norbert Guterman)

Effect of Epidural Morphine on Respiratory Function and Hemodynamic Stability

Enid R. Kafer, M.D., J. Tony Brown, Gregory W. Ross, B.Sc., and Jawahar N. Ghia, M.D.

ABSTRACT We examined the relief of pain, hemodynamic response and respiratory function during the 24 hours following the administration of morphine epidurally 0.1 mg/kg body weight in 12 patients (mean age $44.3 \pm \text{SEM } 3.3$ years) with severe chronic low back pain (duration $69 \pm \text{SEM } 29$ months). Pain was relieved satisfactorily in 10/12 patients within $29.4 \pm \text{SEM } 14.0$ minutes for 16-48 hours. Blood pressure and heart rate measured during the first six hours and 22-24 hours after injection did not change from control. During the first three hours after injection vital capacity, $92 \pm 4\%$ control ($p < 0.05$), minute ventilation, $78 \pm 5\%$ control ($p < 0.02$) and tidal volume $80 \pm 3\%$ control ($p < 0.02$) were reduced. The incidences of nausea, vomiting and urinary retention were low but pruritus developed in six patients. Epidural morphine provides effective analgesia suitable in the rehabilitation of patients with severe back pain. However, continuous observation is essential during the first 24 hours after injection in order to detect possible respiratory depression.

OPIATE receptors have been demonstrated in the pain pathways in the spinal cord and the thalamus¹⁻⁶ as well as in brain stem areas associated with respiratory control and have afferent connections with peripheral chemoreceptors and pulmonary vagal receptors.^{6,7} In experimental animals administration of opiates or enkephalins into the cerebrospinal fluid blocks pain transmission in the dorsal horn but leaves the proprioceptive and motor pathways intact.⁸⁻¹¹ The administration of lumbar epidural or subarachnoid opiates, including morphine, to man results in prolonged, selective segmental analgesia without changes in motor or cardiovascular autonomic function.¹²⁻¹⁴ Epidural opiates are effective in the management of acute postoperative and posttraumatic pain, ischemic pain, pain associated

with pelvic and spinal carcinoma, and severe low back pain.^{13,14}

However, several case reports document severe respiratory depression following epidural morphine or meperidine or subarachnoid morphine.¹⁵⁻²¹ Most of these were patients over 60 years of age who received opiates for postoperative pain;¹⁵⁻²⁰ the respiratory depression from either epidural¹⁹⁻²¹ or subarachnoid morphine^{15,16,18,20} occurred 4-10 hours after injection. Respiratory depression but not analgesia was reversed by naloxone.^{16,17,19,20}

We examined pain relief, hemodynamic response, and respiratory function for 24 hours after the epidural administration of morphine (0.1 mg/kg body weight) for severe low back pain. Our goals were to assess the efficacy of epidural morphine in pain relief and to examine the effects on blood pressure, heart rate, neuromotor function of the respiratory system and minute ventilation, tidal volume and respiratory frequency. This study afforded the opportunity to examine the effects of epidural morphine on hemody-

namic stability and respiratory function in the absence of evolving post-surgical or posttraumatic response. Hemodynamic stability, minute ventilation and neuromotor function of the respiratory system have not been previously assessed systematically during the 24 hours following epidural morphine.

METHODS AND PATIENTS

The effects of 0.1 mg/kg body weight epidural morphine (7 mg/70 kg) administered for severe chronic back pain on hemodynamic stability and respiratory function were examined for 24 hours following epidural morphine. The protocol was approved by the Human Rights Committee of the School of Medicine of the University of North Carolina at Chapel Hill and informed consent was obtained from each patient. The patients were attending the Pain Clinic of the North Carolina Memorial Hospital (NCMH) for management of severe back pain. The morphine was administered once during their rehabilitation program. Except for the severe back pain the patients

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were in their normal state of health and did not have severe organ system disease, psychiatric disorders, bleeding diathesis or back infection.

The mean age of the patients was $44.3 \pm \text{SEM } 3.3$ years (range 29-60) and low back pain had been present for $69 \pm \text{SEM } 29$ months. Two patients were hypertensive and one had obstructive pulmonary disease (FEV_1/VC of 35 percent). The pain was graded on a scale of 0 to 3 and the average was $2.3 \pm \text{SEM } 0.2$.

Administration of epidural morphine: All patients were allowed nothing by mouth for six hours before injection. A cannula was inserted into an arm vein and Ringer's lactate solution begun. With the patient in the lateral decubitus or sitting position an epidural needle (18 gauge, 9 cm Hustead or Crawford epidural needle) was inserted into the 3-4 or 4-5 lumbar interspace. After identification of the epidural space by "loss of resistance" and absence of cerebrospinal fluid, 0.1 mg/kg body weight morphine was injected in 30 seconds into the epidural space. The patient was then placed in the semi-recumbent position. The morphine preparation was free of preservatives (A. H. Robins, Richmond, Va.) and contained per ml morphine sulphate 0.5 mg, sodium chloride 9.0 mg and water for injection to 1 ml. The preparation was protected from light.

After six hours of postinjection observation in the Pain Clinic all patients were admitted to our outpatient motel for overnight observation. At discharge from the Pain Clinic 24 hours after injection the patients were given written and verbal instructions to avoid alcohol, other potent drugs, and driving for 24 hours. Each patient was accompanied home by a responsible adult

and instructed to report to the NCMH Emergency Room or call a Pain Clinic physician in the event of any untoward symptoms.

The patients were seen in the NCMH Pain Clinic at two week intervals for a month, and then every two months for six months thereafter.

Evaluation of pain and pain relief: Severity of pain was graded on a four point scale, 0 = no pain, 1 = mild pain, 2 = moderate pain and 3 = severe pain. Severe pain prevented patients from performing their normal occupations. The evaluation of the analgesic response to epidural morphine included onset of analgesia (latency of onset), time from injection to effective relief of pain (latency of pain relief) and duration of analgesia. Relief of pain was scored on a five point scale by questioning the patient with 0 = worsening of pain, 1 = no change, 2 = some relief, 3 = moderate relief, and 4 = complete relief.

Hemodynamic measurements: Blood pressure and heart rate were measured during the control period prior to injection, at five-minute intervals during the first hour, and hourly up to six hours and 22-24 hours after injection. Blood pressure and heart rate were measured non-invasively using an automatic blood pressure monitor (Sensomat, Biochem International, Milwaukee, Wis.)^{22,23} while the patients were in the semi-recumbent position.

Respiratory measurements: The vital capacity (VC) and forced expiratory volume in one second (FEV_1) were measured on a 9-liter lightweight Godart spirometer (Bilthoven, Holland). All the measurements were performed in triplicate and of each set of three the largest was used.²⁴ Each set was examined for repro-

ducibility and variation between the two best measurements did not exceed 5%. The control values were expressed in liters, BTPS, and as percent predicted,²⁵ and the post-injection values were expressed in liters, BTPS, and as a percent of control.

Resting minute ventilation, tidal volume and respiratory frequency were measured on a 120 liter Warren Collins gasometer (Braintree, Mass.) with patients breathing via a low resistance one-way valve. Data were collected for two periods of 2-3 minutes and each pair of values averaged. The volumes were corrected to BTPS.

Respiratory measurements were made during the control period, hourly for three hours after injection and 22-24 hours after injection. The VC and FEV were measured with the patients in the seated position and resting minute ventilation was measured with the patients in the semi-recumbent position.

Results are expressed as mean \pm SEM.

RESULTS

Pain relief: Pain relief was satisfactory in degree and duration in 10 of 12 patients, although the ranges of latency to effective pain relief and duration of pain relief were wide. The average latency to effective pain relief was 29.4 ± 14 minutes and the range 3-180 minutes. In nine of the 12 patients latency to onset of relief was within 15 minutes of injection. In 10 of the 12 subjects pain was relieved from 16 to 48 hours and in two it was only one hour.

Two patients developed nausea and/or vomiting. Two male patients required catheterization of bladder for urinary retention. Half the patients had pruritus over the body but

TABLE 1: Effects of 0.1 mg/kg of epidural morphine on heart rate, blood pressure, minute ventilation, respiratory frequency and tidal volume (mean \pm SEM)

Variable	Control Value	One Hour Postinjection	Two Hours Postinjection	Three Hours Postinjection	22-24 Hours Postinjection
Heart Rate (beats/minute), n = 12	85 ± 3.6	79 ± 3.4	74 ± 3.3	75 ± 3.7	84 ± 3.9
Systolic Pressure (mmHg), n = 12	139 ± 5.3	139 ± 5.3	139 ± 5.7	136 ± 5.2	132 ± 4.8
Diastolic Pressure (mmHg) n = 12	83 ± 3.6	84 ± 3.3	80 ± 3.7	79 ± 3.6	80 ± 3.8
Minute Ventilation (BTPS), n = 5	10.3 ± 0.7	9.2 ± 0.6	8.9 ± 0.4	8.2 ± 0.2	10.3 ± 0.3
Tidal Volume ml, BTPS, n = 5	651 ± 60	551 ± 37	529 ± 42	507 ± 31	567 ± 43
Breaths/Minute, n = 5	16.2 ± 1.3	16.9 ± 1.2	17.1 ± 1.5	16.5 ± 1.2	18.5 ± 1.4

in the majority it was mild and did not prevent sleeping.

Blood pressure and heart rate: The preinjection systolic and diastolic blood pressures were 139 ± 5.3 and 83 ± 3.6 mm Hg and the heart rate was 85 ± 3.6 per minute. Blood pressure and heart rate during the first six hours after injection were not significantly different from the preinjection or the 22-24 hour post-injection values (Table I).

Respiratory function: Minute ventilation, tidal volume and respiratory frequency were measured in five patients (Table I). The mean preinjection minute ventilation was 10.3 ± 0.7 liters/minute, tidal volume was 651 ± 60 ml and respiratory frequency was 16.2 ± 1.3 breaths per minute. Although there were reductions in minute ventilation and tidal volume the postinjection values of minute ventilation, tidal volume and respiratory frequency at 1, 2, and 3 hours were not significantly different from the preinjection values. However, the hours after injection at which maximal reduction in minute ventilation and tidal volume occurred in each patient varied between 1-3 hours. The lowest mean minute ventilation was 8.1 ± 0.2 liters/minute ($78 \pm 5.4\%$ control) and tidal volume was 501 ± 34 ml ($80 \pm 3.1\%$). Both of these values were significantly different from their respective control values at $P < 0.02$ level (Paired t test). The respiratory frequency did not change and therefore any decrease in minute ventilation was the result of reduction in tidal volume.

The VC and FEV₁ were measured in 8 of the 12 patients. The mean control VC was 3.9 ± 0.2 liters (84 ± 3 percent predicted) and the mean control FEV₁ was 3.0 ± 0.3 liters (89 ± 11 percent predicted) (Table II). The VC and FEV₁ were 3.4 and 1.2 liters, respectively, in the patient with obstructive lung disease. During the first three hours in 7 of 8 patients the VC was reduced and the mean decrease was 0.41 ± 0.10 liter (range 0.110-0.920 liter). However, the hours after injection at which the maximal reduction in VC occurred varied between 1 and 3 hours. Therefore, the mean VCs and FEV₁s at 1, 2, and 3 hours

TABLE II: Effect of 0.1 mg/kg body weight epidural morphine for chronic back pain on vital capacity and forced expiratory volume in one second

Variable	Control Value Liter, BTPS	One Hour Post- injection % control	Two Hours Post- injection % control	Three Hours Post- injection % control	22-24 Hours Post- injection % control
Vital Capacity	3.9 ± 0.2	95.8 ± 3.8	97.6 ± 3.0	95.1 ± 2.4	97.0 ± 2.7
FEV ₁	3.0 ± 0.3	96.0 ± 5.2	98.3 ± 4.7	95.6 ± 3.9	95.4 ± 3.7
8 Patients, mean \pm SEM					

postinjection were not significantly different from the preinjection values but the mean lowest VC during the first 3 hours which was 3.6 ± 0.3 liters ($92 \pm 4\%$ control) was significantly less than the preinjection value ($P < 0.05$ paired one tailed t test). At 24 hours the VC and FEV₁ were not significantly different from the control values.

The FEV₁ in the patient with obstructive pulmonary disease increased at one hour postinjection from 1.2 to 1.3 liters and at two hours postinjection had increased to 1.4 liters (14% increase). After 22-24 hours the FEV₁ had returned to the preinjection value of 1.2 liters.

DISCUSSION

Analgesia and respiratory function: Pain relief has always been bought at a price.²⁶ Parenteral narcotic analgesic depress ventilation,²⁷ inhibit sighs,²⁸ and impair both the chemical regulation of ventilation²⁹ and the neural reflex increase in respiratory drive in response to mechanical loads.^{30,31} Regional anesthesia, such as epidural analgesia, does not impair the central respiratory control systems but blocks the sympathetic efferent system and may impair the respiratory neuromotor system. However, due to the complexity of administration and the requirements of monitoring, epidural analgesia has not been extensively utilized in the management of severe pain such as postoperative pain. Therefore, epidural opiates appeared to offer major advantages as a result of the prolonged selective segmental analgesia and the apparent freedom from serious side effects. However, reports of severe respiratory depression following subarachnoid and epidural opiates¹⁵⁻²¹ have necessitated an examination

of the respiratory pharmacology and pharmacokinetics of epidural opiates.

Opiate receptors have been demonstrated in large numbers in afferent pathways from the peripheral chemoreceptors (nucleus tractus solitarius) and in the afferent pathways from the pulmonary vagal receptors.⁵⁻⁷ These observations therefore suggest a neuropharmacologic mechanism for the reduced ventilatory response to hypoxemia²⁹ by blockade of afferents from the peripheral chemoreceptors. Blockade of vagal afferents from the pulmonary stretch receptors has been demonstrated to reduce the ventilatory response to CO₂ by abolishing the increase in respiratory frequency.³² We therefore postulate that opiates may also block the afferent pathway from pulmonary stretch receptors and therefore abolish or reduce the increase in respiratory frequency in response to CO₂. The contribution of this mechanism to the reduction in the ventilatory response to CO₂ in man has not been assessed quantitatively. Many opiate receptors are also present in the areas of the vagal afferent nuclei concerned with the synaptic transmission of impulses by fine fibers. This observation provides an explanation of the relief of dyspnea by opiates where the dyspnea is the result of pulmonary edema. The J receptors of the lung which are stimulated in pulmonary edema transmit afferents to the neuraxis via fine fibers.³³ The direct administration of opiates in the cisterna magna and the fourth ventricle results in respiratory depression at doses only a fraction of those administered systemically.³⁴

Following epidural morphine there is a rapid rise in the lumbar cerebrospinal fluid and blood con-

centration of the drug.^{14,21} We postulate that the blood concentration, which peaks within 15 minutes, results in a redistribution to the brain and subsequent mild central respiratory depression. We also postulate that mass movement of the CSF due to coughing, straining and changes in posture may result in high concentrations in the cisterna magna, albeit unpredictably. Diffusion in the CSF to the cisterna magna may also transport opiates to the brain stem. Therefore, we predict two phases of depression of respiratory control: an early mild depression the result of blood redistribution and a later, less predictable depression the result of mass movement or diffusion in the CSF.

Analgesic response to epidural morphine: The duration and quality of relief of severe chronic pain in the majority of our patients was good. Magora and associates¹⁴ reported that 52% of 17 patients (21 injections) obtained good, 33% fair, and 14% poor relief from pain after 2-3 mg of epidural morphine. In our study a higher dose of epidural morphine was administered and was combined with a rehabilitation program, a therapeutic regimen we consider effective.

The incidences of nausea, vomiting and urinary retention were low. Nausea and vomiting were less frequent with epidural morphine than with the same dose given intravenously.³⁵ We also observed that the incidence of nausea and vomiting was dose-related and could be minimized by using the lowest effective analgesic dose. The incidence of urinary retention is similar to that reported in other series.³⁵

Pruritus was common but in most patients it did not interfere with activity or sleep. Itching has been previously reported after epidural morphine³⁵ and was attributed to the release of histamine from mast cells.³⁶ However, antihistamines are therapeutically ineffective. Intracisternal or intramedullary injection of morphine in animals results in a scratch response^{37,38} and naloxone controls pruritus in systemic diseases.^{39,40} Therefore, al-

though Reiz and Westburg attributed the pruritus following epidural morphine to the preservatives, it appears to result from the action of morphine on the central nervous system. A preservative-free preparation was used in our study.

No transient clinical neurologic signs were observed 24 hours after epidural morphine or at later examinations.

Respiratory and cardiovascular function: Although our series was small, age range was wide and patients with hypertension and chronic obstructive pulmonary disease were included. Respiratory failure was not observed, blood pressure and heart rate were stable and there was no evidence of depression of minute ventilation or alteration in ventilatory pattern. The reduction in minute ventilation and tidal volume were probably the result of a mild increase in the preinjection minute ventilation and tidal volume because of pain and anxiety about the injection.

We have shown that 0.1 mg/kg body weight epidural morphine in chronic pain patients results in mild impairment in the respiratory neuromotor function during the first three hours as evidenced by the reduction in VC. In normal adults the maximal inspiratory volume (total lung capacity, TLC) is determined by the balance of inspiratory muscle force opposing the elastic forces of the chest wall and the lung. In adults the volume at maximal expiration, residual volume (RV) is determined by flow limitation or airways closure.^{41,42} Since there is no evidence that low-dose morphine alters the elastic forces of the chest wall or lungs we would conclude that any decrease in maximal inspiratory volume is the result of reduced inspiratory muscle force. Similarly, there is no evidence that morphine increases the volume at which flow limitation or airway closure occurs and therefore that it decreases VC as a result of an increase in RV. However, since we did not measure RV we cannot exclude this possibility. Nevertheless, we postulate the most probable mechanism for a decrease in VC is a reduction in the maximum voluntary inspiratory

muscle force. The possible sites of action of opiates which might account for this include the motor cortex because this is a voluntary maneuver and the lower motor neurons of inspiratory muscles. There is no evidence that low doses of morphine impair neuromuscular transmission. Therefore, any impairment of inspiratory muscle force is probably due to action on the motor cortex or spinal cord.

The effect of epidural morphine on the neuromotor function of the respiratory system in the absence of postoperative pain¹³ has not been previously examined. The demonstration that epidural morphine results in a mild depression of neuromotor function is therefore of interest.

Although these data are reassuring, further assessment with an examination of the effect of epidural morphine on the chemical regulation of ventilation and the neural reflex responses to mechanical loads are essential to our understanding.

Variation in analgesic and respiratory responses to epidural morphine: A notable feature of the analgesia obtained and the reduction in vital capacity found was the variations between patients in latency to effective pain relief, and the timing and magnitude of reduction in VC. Mechanisms which might account for these variations include: 1) variations in the potency of the morphine preparation and the dose administered; 2) differences in the rate of absorption from the epidural space as a result of variations in epidural blood flow and rate of diffusion into the cerebrospinal fluid; 3) differences in the rate and distribution in the brain due to regional blood flow and 4) undefined factors which modify the "sensitivity" of receptors to morphine and the response of the respiratory neuromotor system and the patient to morphine analgesia. Because of the importance of the dose-response relationship for the efficacy of pain control and the prediction of respiratory complications these factors need to be examined.

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To give an idea of the difficulty of investigating the causes of medical phenomena, the following remarks will be sufficient.

The same causes, apparently under the same circumstances, will have different effects; thus, a current of cold air blowing on the upper parts of the body, produces in the same system, croup, or palsy of the muscles of the face: the same cause, apparently under different circumstances, will produce the same effect; thus, miasmata developed in every variety of constitution, the intermittent fever; which, when epidemic, assumes the character of almost all diseases. Different causes, to all appearance under different circumstances, produce the same effect; apoplexy is the result of the heat of the sun, of high living, etc. proving that the subject requires the most patient and unwearied attention and research: for the qualities of the air, of food, exposure, predisposition, etc. all operate to give a distracted character to the face of medical opinion. — *Elements of the Theory and Practice of Physic*, by George Gregory, M.D., with notes and additions, adapted to the Practice of the United States, by Nathaniel Potter, M.D., and S. Colhoun, M.D., Vol. I, Philadelphia, Towar & Hogan, 1829.

Special Article

Proceedings of the State Medical Convention, Held in Raleigh, April, 1849, and Constitution and Medical Ethics of The Medical Society of the State of North Carolina, Then Adopted

INTRODUCTION: This issue of the JOURNAL offers the "Proceedings of the State Medical Convention held in Raleigh, April 1849 and Constitution and Medical Ethics of the Medical Society of the State of North Carolina Then Adopted" as "published by the order of the convention." The printer was W. W. Holden, fully named William Woods Holden (1818-1892) known to history as the editor of the RALEIGH STANDARD, an early Democratic opponent of Zebulon Baird Vance, later Republican party leader and state governor after the Civil War and as controversial a character as 19th Century North Carolina politics spawned.

The document is well worth reading for the light it casts on the beginnings of our society. Its founders

offer injunctions to us and set forth the right good standard for proper medical behavior. Their detailed indictments of cults and of followers of the bizarre in the healing arts deserve our attention as well. Our medical forbears would recognize that the many alternative forms of healing advocated today had their equivalents then and would also remind us that man's morals have hardly been buttressed by either political party (Whigs and Democrats then, Republicans and Democrats now) or by governments at any time.

If we can judge from the style of the composers, theirs was a more leisurely time when prose could be polished, elaborated and exact in definition. They did use such Britishisms as savour and offence, in-

stead of savor and offense but even that adds savour.

The elaborate courtesy of consultation practiced then lives on only in its description but it did serve effectively to defuse tempers and prevent polemics in a profession which above all demands calmness, kindness, honesty and a judicious approach to patients. Today we are more cognizant and tolerant of clinical disagreement, partly because we are aware of so many more diagnostic and therapeutic possibilities. In fact, we encourage some of this disagreement because it attests to greater understanding and sustained curiosity. It reflects the vitality of modern medicine, encourages scholarship and allows the cultivation of judgment without encouraging the judgmental.

J.H.F.

CODE OF MEDICAL ETHICS

Adopted by the American Medical Association and recognized by the Medical Society of the State of North Carolina.

Excerpted from the Proceedings of the State Medical Convention, held in Raleigh, April, 1849

INTRODUCTION TO THE CODE OF MEDICAL ETHICS.

MEDICAL ethics, as a branch of general ethics, must rest on the basis of religion and morality. They

comprise not only the duties, but also the rights of a physician: and, in this sense, they are identical with Medical Deontology — a term introduced by a late writer, who has

taken the most comprehensive view of the subject.

In framing a code on this basis, we have the inestimable advantage of deducting its rules from the con-

duct of the many eminent physicians who have adorned the profession by their learning and their piety. From the age of Hippocrates to the present time, the annals of every civilized people contain abundant evidences of the devotedness of medical men to the relief of their fellow creatures from pain and disease, regardless of the privation and danger, and not seldom obloquy, encountered in return; a sense of ethical obligations rising superior, in their minds, to considerations of personal advancement. Well and truly was it said by one of the most learned men of the last century, that the duties of a physician were never more beautifully exemplified than in the conduct of Hippocrates, nor more eloquently described than in his writings.

We may here remark, that, if a state of probation be intended for moral discipline, there is assuredly, much in the daily life of a physician to impart this salutary training, and to insure continuance in a course of self-denial, and at the same time, of zealous and methodical efforts for the relief of the suffering and unfortunate, irrespective of rank or fortune, or of fortuitous elevation of any kind.

A few considerations on the legitimate range of medical ethics will serve as an appropriate introduction to the requisite rules for our guidance in the complex relations of professional life.

Every duty or obligation implies, both in equity and for its successful discharge, a corresponding right. As it is the duty of a physician to advise, so has he a right to be attentively and respectfully listened to. Being required to expose his health and life for the benefit of the community, he has a just claim, in return, on all its members, collectively and individually, for aid to carry out his measures, and for all possible tenderness and regard to prevent needlessly harassing calls on his services and unnecessary exhaustion of his benevolent sympathies.

His zeal, talents, attainments and skill are qualities which he holds in trust for the general good, and

which cannot be prodigally spent, either through his own negligence or the inconsiderateness of others, without wrong and detriment both to himself and to them.

The greater the importance of the subject and the more deeply interested all are in the issue, the more necessary it is that the physician — he who performs the chief part, and in whose judgment and discretion under Providence, life is secured and death turned aside — should be allowed the free use of his faculties, undisturbed by a querulous manner, and desponding, angry, or passionate interjections, under the plea of fear, or grief, or disappointment of cherished hopes, by the sick and their friends.

All persons privileged to enter the sick room, and the number ought to be very limited, are under equal obligations of reciprocal courtesy, kindness and respect; and, if any exception be admissible, it cannot be at the expense of the physician. His position, purposes and proper efforts eminently entitle him to, at least, the same respectful and considerate attentions that are paid, as a matter of course and apparently without constraint, to the clergyman, who is admitted to administer spiritual consolation, and to the lawyer who comes to make the last will and testament.

Although professional duty requires of a physician, that he should have such a control over himself as not to betray strong emotion in the presence of his patient, not to be thrown off his guard by the querulousness or even rudeness of the latter, or of his friends at the bedside, yet, and the fact ought to be generally known, many medical men, possessed of abundant attainments and resources, are so constitutionally timid and readily abashed as to lose much of their self-possession and usefulness at the critical moment, if opposition be abruptly interposed to any part of the plan which they are about devising for the benefit of their patients.

Medical ethics cannot be so divided as that one part shall obtain the full and proper force of moral obligations on physicians univer-

sally, and, at the same time, the other be construed in such a way as to free society from all restrictions in its conduct to them; leaving it to the caprice of the hour to determine whether the truly learned shall be overlooked in favor of ignorant pretenders — persons destitute alike of original talent and acquired fitness.

The choice is not indifferent in an ethical point of view, besides its important bearing on the fate of the sick themselves, between the directness and sincerity of purpose, the honest zeal, the learning and impartial observations, accumulated from age to age for thousands of years, of the regularly initiated members of the medical profession, and the crooked devices and low arts, for evidently selfish ends, the unsupported promises and reckless trials of interloping empirics, whose very announcements of the means by which they profess to perform their wonders, are, for the most part, misleading and false, and, so far, fraudulent.

In thus deducing the rights of a physician from his duties, it is not meant to insist on such a correlative obligation, that the withholding of the right exonerates from the discharge of the duty. Short of the formal abandonment of the practice of his profession, no medical man can withhold his services from the requisition either of an individual or of the community, unless under circumstances, of rare occurrence, in which his compliance would be not only unjust, but degrading to himself, or to a professional brother, and so far diminish his future usefulness. In the discharge of their duties to society, physicians must be ever ready and prompt to administer professional aid to all applicants, without prior stipulation of personal advantages to themselves.

On them devolves, in a peculiar manner, the task of noting all the circumstances affecting the public health, and of displaying skill and ingenuity in devising the best means for its protection.

With them rests also the solemn duty of furnishing accurate medical testimony in all cases of criminal accusation of violence, by which

health is endangered and life destroyed, and in those other numerous ones involving the question of mental sanity and of moral and legal responsibility.

On these subjects — Public Hygiene and Medical Jurisprudence — every medical man must be supposed to have prepared himself by study, observation, and the exercise of a sound judgment. They cannot be regarded in the light of accomplishments merely: they are an integral part of the science and practice of medicine.

It is a delicate and noble task, by the judicious application of Public Hygiene, to prevent disease and prolong life; and thus to increase the productive industry, and, without assuming the office of moral and religious teaching, to add to the civilization of an entire people.

In the performance of this part of their duty, physicians are enabled to exhibit the close connection between hygiene and morals; since all the causes contributing to the former are nearly equally auxiliary to the latter. Physicians, as conservators of public health, are bound to bear emphatic testimony against quackery in all its forms, whether it appears with its usual effrontery, or masks itself under the garb of philanthropy and sometimes religion itself. By an anomaly in legislation and penal enactments, the laws so stringent for the repression and punishment of fraud in general, and against attempts to sell poisonous substances for food, are silent, and of course inoperative, in the cases of both fraud and poisoning so extensively carried on by the host of quacks who infest the land.

The newspaper press, powerful in the correction of many abuses, is too ready, for the sake of lure, to aid and abet the enormities of quackery. Honorable exceptions to the once general practice in this respect are becoming, happily, more numerous, and they might be more rapidly increased, if physicians when themselves free from all taint, were to direct the attention of the editors and proprietors of newspapers, and of periodical works in general to the moral bearings of the subject.

To those who, like physicians, can best see the extent of the evil, it is still more mortifying than in the instances already mentioned, to find members of other professions, and especially ministers of the Gospel, so prone to give their countenance, and, at times, direct patronage, to medical empirics, both by their use of nostrums, and by their certificates in favor of the absurd pretension of these impostors. The credulous, on these occasions, place themselves in the dilemma of bearing testimony either to a miracle or to an imposture; to a miracle, if one particular agent, and it often of known inertness or slight power, can cure all diseases, or even any one disease in all stages; to an imposture, if the alleged cures are not made, as experience shows they are not.

But by no class are quack medicines and nostrums so largely sold and distributed as by apothecaries, whose position towards physicians, although it may not amount to actual affinity, is such that it ought, at least, to prevent them from entering into an actual, if not formally recognized, alliance with empirics of every grade and degree of pretension.

Too frequently we meet with physicians who deem it a venial error in ethics, to permit, and even to recommend, the use of a quack medicine or secret compound by their patients and friends. They forget that their toleration implies sanction of a recourse by the people generally to unknown, doubtful and conjectural fashions of medication; and that the credulous in this way soon become the victims of an endless succession of empirics. It must have been generally noticed, also, that they whose faith is strongest in the most absurd pretensions of quackery, entertain the greatest skepticism towards regular and philosophic medicine.

Adverse alike to ethical propriety and to medical logic, are the various popular delusions which, like so many epidemics, have in successive ages, excited the imagination with extravagant expectations of the cure of all diseases and the prolongation of life beyond its customary limits,

by means of a single substance. Although it is not in the power of physicians to prevent, or always to arrest, these delusions in their progress, yet it is incumbent on them, from their superior knowledge and better opportunities, as well as from their elevated vocation, steadily to refuse to extend to them the slightest countenance, still less support.

These delusions are sometimes manifested in the guise of new and infallible systems of medical practice, — faith in which, among the excited believers, is usually in the inverse ratio of the amount of common sense evidence in its favor. Among the volunteer missionaries for its dissemination, it is painful to see members of the sacred profession, who above all others, ought to keep aloof from vagaries of any description, and especially of those medical ones which are allied to empirical imposture.

The plea of good intention is not an adequate reason for the assumption of so grave a responsibility as the propagation of a theory and practice of medicine, of the real foundation and nature of which the mere medical amateur must necessarily, from his want of opportunities for study, observation, and careful comparison, be profoundly ignorant.

In their relations with the sick, physicians are bound by every consideration of duty, to exercise the greatest kindness with the greatest circumspection; so that whilst they make every allowance for impatience, irritation and inconsistencies of manner and speech of the sufferers, and do their utmost to soothe and tranquilize, they shall at the same time elicit from them and the persons in their confidence, a revelation of all the circumstances connected with the probable origin of the diseases which they are called upon to treat.

Owing either to the confusion and, at times, obliquity of mind produced by the disease, or to considerations of false delicacy and shame, the truth is not always directly reached on these occasions; and hence the necessity, on the part of the physician, of a careful and

minute investigation into both the physical and moral state of his patient. A physician in attendance on a case should avoid expensive complications and tedious ceremonials, as being beneath the dignity of true science and embarrassing to the patient and his family, whose troubles are already great.

In their intercourse with each other, physicians will best consult and secure their own self-respect and consideration from society in general, by a uniform courtesy and high-minded conduct towards their professional brethren. The confidence in his intellectual and moral worth, which each member of the profession is ambitious of obtaining for himself among his associates, ought to make him willing to place the same confidence in the worth of others.

Veracity, so requisite in all the relations of life, is a jewel of inestimable value in medical description and narrative, the lustre of which ought never to be tarnished for a moment, by even the breath of suspicion. Physicians are peculiarly enjoined, by every consideration of honour and of conscientious regard for the health and lives of their fellow being, not to advance any statement unsupported by positive facts, nor to hazard an opinion or hypothesis that is not the result of deliberate inquiry into all the data and bearings of which the subject is capable. Hasty generalization, paradox, and fanciful conjectures, repudiated at all times by sound logic, are open to the severest reprehension on the still higher grounds of humanity and morals. Their tendency and practical operation cannot fail to be eminently mischievous.

Among medical men associated together for the performance of professional duties in public institutions, such as Medical Colleges, Hospitals and Dispensaries, there ought to exist, not only harmonious intercourse, but also a general harmony in doctrine and practice; so that neither student nor patients shall be perplexed, nor the medical community mortified by contradictory views of the theory of disease, if not of the means of curing it.

The right of free inquiry, common to all, does not imply the utterance of crude hypothesis, the use of figurative language, a straining after novelty for novelty's sake, and the involution of old truths, for temporary effect and popularity, by medical writers and teachers. If, therefore, they who are engaged in a common cause, and for the furtherance of a common object, could make an offering of the extreme, the doubtful, and the redundant, at the shrine of philosophical truth, the general harmony in medical teaching, now desired, would be of easy attainment.

It is not enough, however, that the members of the medical profession be zealous, well informed and self-denying, unless the social principle be cultivated by their seeking frequent intercourse with each other, and cultivating, reciprocally, friendly habits of acting in common. By union alone can medical men hope to sustain the dignity and extend the usefulness of their profession. Among the chief means to bring about this desirable end, are frequent social meetings and regularly organized Societies; a part of whose beneficial operation would be an agreement on a suitable standard of medical education, and a code of medical ethics.

Greatly increased influence, for the entire body of the profession, will be acquired by a union for the purposes of common benefit and the general good; while to its members, individually, will be insured a more pleasant and harmonious intercourse, one with another, and an avoidance of many heartburnings and jealousies, which originate in misconceptions, through misrepresentation on the part of individuals in general society, of each other's disposition, motives and conduct. In vain will physicians appeal to the intelligence and elevated feelings of the members of other professions, and of the better part of society in general, unless they be true to themselves, by a close adherence to their duties, and by firmly yet mildly insisting on their rights; and this not with glimmering perception and faint avowal but rather with a

full understanding and firm convictions.

Impressed with the nobleness of their vocation, as trustees of science and almoners of benevolence and charity, physicians should use unceasing vigilance to prevent the introduction into their body of those who have not been prepared by a suitably preparatory moral and intellectual training.

No youth ought to be allowed to study medicine, whose capacity, good conduct, and elementary knowledge are not equal, at least, to the common standard of academical requirements.

Human life and human happiness must not be endangered by the incompetence of presumptuous pretenders. The greater and inherent difficulties of medicine, as a science, and the more numerous the complications that embarrass in its practice, the more necessary is it that there should be minds of a higher order and thorough cultivation to unravel its mysteries and to deduce scientific order from apparently empirical confusion.

We are under the strongest ethical obligations to preserve the character which has been awarded, by the most learned men and best judges of human nature, to the medical profession, for general and extensive knowledge, great liberality, and dignity of sentiment, and prompt effusions of beneficence.

In order that we may continue to merit these praises, every physician, within the circle of his acquaintance, should impress both fathers and sons with the range and variety of medical study, and with the necessity of those who desire to engage in it, possessing, not only good preliminary knowledge, but, likewise some habits of regular and systematic thinking.

If able teachers and writers, and profound inquirers, be still called for to expound medical science, and to extend its domain of practical application and usefulness, they cannot be procured by intuitive effort of their own part, nor by the exercise of the elective suffrage on the part of others. They must be the product of a regular and comprehensive system — members of a large class,

from the great body of which they only differ by the force of fortuitous

circumstances, that gives them temporary vantage ground for the

display of qualities and attainments common to their brethren.

CHAPTER ONE

OF THE DUTIES OF PHYSICIANS TO THEIR PATIENTS AND OF THE OBLIGATIONS OF PATIENTS TO THEIR PHYSICIANS.

Art. I — Duties of Physicians to their Patients.

1. A Physician should not only be ever ready to obey the calls of the sick, but his mind ought also to be imbued with the greatness of his mission, and the responsibility he habitually incurs in its discharge. Those obligations are the more deep and enduring, because there is no tribunal other than his own conscience, to adjudge penalties for carelessness or neglect. Physicians should, therefore, minister to the sick with due impressions of the importance of their office; reflecting that the ease, the health and the lives of those committed to their office; reflecting that the ease, the health and the lives of those committed to their charge depend on their skill, attention, and fidelity. They should study, also, in their deportment, so to unite tenderness with firmness, and condescension with authority, as to inspire the minds of their patients with gratitude, respect and confidence.

2. Every case committed to the charge of a physician should be treated with attention, steadiness and humanity. Reasonable indulgence should be granted to the mental imbecility and caprices of the sick. Secrecy and delicacy, when required by peculiar circumstances, should be strictly observed; and the familiar and confidential intercourse to which physicians are admitted in their professional visits, should be used with discretion, and with the most scrupulous regard to fidelity and honor. The obligation of secrecy extends beyond the period of professional services; none of the privacies of personal and domestic life, no infirmity of disposition or flaw of character observed during professional attendance, should ever be divulged by him except

when he is imperatively required to do so. The force and necessity of this obligation are indeed so great, that professional men have, under certain circumstances, been protected in their observance of secrecy by courts of justice.

3. Frequent visits to the sick are in general requisite, since they enable the physician to arrive at a more perfect knowledge of the disease, — to meet promptly every change which may occur, and also tend to preserve the confidence of the patient. But unnecessary visits are to be avoided, as they give useless anxiety to the patient, tend to diminish the authority of the physician, and render him liable to be suspected of interested motives.

4. A physician should not be forward to make gloomy prognostications, because they savour of empiricism, by magnifying the importance of his services in the treatment of cure of the disease. But he should not fail, on proper occasions, to give to the friends of the patient timely notice of danger, when it really occurs; and even to the patient himself, if absolutely necessary. This office, however, is so peculiarly alarming when executed by him, that it ought to be declined whenever it can be assigned to any other person of sufficient judgment and delicacy. For, the physician should be the minister of hope and comfort to the sick, that by such cordials to the drooping spirit, he may smooth the bed of death, revive expiring life, and counteract the depressing influence of those maladies which often disturb the tranquility of the most resigned, in their last moments. The life of a sick person can be shortened not only by the acts, but also by the words of manner of a physician. It is therefore, a sacred duty to guard himself carefully in this re-

spect, and to avoid all things which have a tendency to discourage the patient and to depress his spirits.

5. A physician ought not to abandon a patient because the case is deemed incurable; for his attendance may continue to be highly useful to the patient, and comforting to the relatives around him, even in the last period of a fatal malady, by alleviating pain and other symptoms, and by soothing mental anguish. To decline attendance, under such circumstances, would be sacrificing to fanciful delicacy and mistaken liberality, that moral duty which is independent of, and far superior to, all pecuniary considerations.

6. Consultations should be promoted in difficult or protracted cases, as they give rise to confidence, energy, and more enlarged views in practice.

7. The opportunity which a physician not unfrequently enjoys of promoting and strengthening the good resolutions of his patients, suffering under the consequences of vicious conduct, ought never to be neglected. His counsels, or even remonstrances, will give satisfaction, not offence, if they be proffered with politeness, and evince a genuine love of virtue, accompanied by a sincere interest in the welfare of the person to whom they are addressed.

Art. II — Obligations of Patients to their Physicians

1. The members of the medical profession, upon whom are enjoined the performance of so many important and arduous duties towards the community, and who are required to make so many sacrifices of comfort, ease, and health, for the welfare of those who avail themselves of their services, certainly have a right to expect and require,

that their patients should entertain a just sense of the duties which they owe to their medical attendants.

2. The first duty of a patient is, to select as his medical adviser one who has received a regular professional education. In no trade or occupation, do mankind rely on the skill of an untaught artist; and in medicine, confessedly the most difficult and intricate of the sciences, the world ought not to suppose that knowledge is intuitive.

3. Patients should prefer a physician whose habits of life are regular and who is not devoted to company, pleasure, or to any pursuit incompatible with his professional obligations. A patient should, also, confide the care of himself and family, as much as possible, to one physician, for a medical man who has become acquainted with the peculiarities of constitution, habits, and predispositions of those he attends, is more likely to be successful in his treatment, than one who does not possess that knowledge.

A patient who has thus selected his physician, should always apply for advice in what may appear to him trivial cases, for the most fatal results often supervene on the slightest accidents. It is of still more importance that he should apply for assistance in the forming stage of violent diseases; it is to a neglect of this precept that medicine owes much of the uncertainty and imperfection with which it has been reproached.

4. Patients should faithfully and unreservedly communicate to their physician the supposed cause of their disease. This is the more important, as many diseases of mental origin simulate those depending on external causes, and yet are only to be cured by ministering to the mind diseased. A patient should never be afraid of thus making his physician his friend and adviser; he should always bear in mind that a medical man is under the strongest obliga-

tions of secrecy. Even the female sex should never allow feelings of shame or delicacy to prevent their disclosing the seat, symptoms and causes of complaints peculiar to them. However commendable a modest reserve may be in the common occurrences of life, its strict observance in medicine is often attended with the most serious consequences, and a patient may sink under a painful and loathsome disease, which might have been readily prevented, had timely intimation been given to the physician.

5. A patient should never weary his physician with a tedious detail of events or matters not appertaining to his disease. Even as relates to his actual symptoms, he will convey much more real information by giving clear answers to interrogatories, than by the most minute account of his own framing. Neither should he obtrude the details of his business nor the history of his family concerns.

6. The obedience of a patient to the prescriptions of his physician should be prompt and implicit. He should never permit his own crude opinions as to their fitness, to influence his attention to them. A failure in one particular may render an otherwise judicious treatment dangerous, and even fatal. This remark is equally applicable to diet, drink, and exercise. As patients become convalescent they are very apt to suppose that the rules prescribed for them may be disregarded, and the consequence but too often, is a relapse. Patients should never allow themselves to be persuaded to take any medicine whatever, that may be recommended to them by the self-constituted doctors and doctresses, who are so frequently met with, and who pretend to possess infallible remedies for the cure of every disease. However simple some of their prescriptions may appear to be, it often happens that they are productive of much mischief, and in all

cases they are injurious, by contravening the plan of treatment adopted by the physician.

7. A patient should, if possible, avoid even the friendly visits of a physician who is not attending him, and when he does receive them, he should never converse on the subject of his disease, as an observation may be made, without any intention of interference, which may destroy his confidence in the course he is pursuing, and induce him to neglect the directions prescribed to him. A patient should never send for a consulting physician without the express consent of his own medical attendant. It is of great importance that physicians should act in concert; for, although their modes of treatment may be attended with equal success when employed singly, yet conjointly they are very likely to be productive of disastrous results.

8. When a patient wishes to dismiss his physician, justice and common courtesy require that he should declare his reasons for so doing.

9. Patients should always, when practicable, send for their physician in the morning, before his usual, hour of going out; for, by being early aware of the visits he has to pay during the day, the physician is able to apportion his time in such a manner as to prevent an interference of engagements. Patients should also avoid calling on their medical adviser unnecessarily during the hours devoted to meals or sleep. They should always be in readiness to receive the visits of their physician, as the detention of a few minutes is often of serious inconvenience to him.

10. A patient should, after his recovery, entertain a just and enduring sense of the value of the services rendered him by his physician; for these are of such a character, that no mere pecuniary acknowledgment can repay or cancel them.

CHAPTER TWO

OF THE DUTIES OF PHYSICIANS TO EACH OTHER, AND TO THE PROFESSION AT LARGE.

Art. I. — Duties for the support of professional character.

1. Every individual, on entering the profession, as he becomes thereby entitled to all its privileges and immunities, incurs an obligation to exert his best abilities to maintain its dignity and honor, to exalt its standing, and to extend the bounds of its usefulness. He should therefore observe strictly, such laws as are instituted for the government of its members — should avoid all contumelious and sarcastic remarks relative to the faculty, as a body; and while, by unwearied diligence, he resorts to every honorable means of enriching the science, he should entertain a due respect for his seniors, who have, by their labours, brought it to the elevated position in which he finds it.

2. There is no profession, from the member of which greater purity of character, and a higher standard of moral excellence are required, than the medical; and to attain such eminence, is a duty every physician owes alike to his profession, and to his patients. It is due to the latter, as without it he cannot command their respect and confidence, and to both, because no scientific attainments can compensate for the want to correct moral principles. It is also incumbent upon the faculty to be temperate in all things, for the practice to physic requires the unremitting exercise of a clear and vigorous understanding; and, on emergencies for which no professional man should be unprepared, a steady hand, an acute eye, and an unclouded head may be essential to the well-being, and even to the life of a fellow creature.

3. It is derogatory to the dignity of the profession, to resort to public advertisements or private cards or handbills, inviting the attention of individuals affected with particular diseases — publicly offering advice and medicine to the poor gratis, or promising radical cures; or to publish cases and operations in the daily prints or suffer such publications to

be made; — to invite laymen to be present at operations, — to boast of cures and remedies, — to adduce certificates of skill and success, or to perform any other similar acts. These are the ordinary practice of empirics, and are highly reprehensible in a regular physician.

4. Equally derogatory to professional character is it, for a physician to hold a patent for any surgical instrument, or medicine; or to dispense a secret nostrum, whether it be the composition or exclusive property of himself, or of others. For if such nostrum be of real efficacy, any concealment regarding it is inconsistent with beneficence and professional liberality; and, if mystery alone give it value and importance, such craft implies either disgraceful ignorance, or fraudulent avarice. It is also reprehensible for physicians to give certificates attesting the efficacy of patent or secret medicines, or in any way to promote the use of them.

Art. II — Professional services of physicians to each other.

1. All practitioners of medicine, their wives, and their children, while under the paternal care, are entitled to the gratuitous services of any one or more of the faculty residing near them, whose assistance may be desired. A physician afflicted with disease is usually an incompetent judge of his own case; and the natural anxiety and solicitude which he experiences at the sickness of a wife, a child, or any one who by the ties of consanguinity is rendered peculiarly dear to him, tend to obscure his judgment, and produce timidity and irresolution in his practice. Under such circumstances, medical men are peculiarly dependent upon each other, and kind offices and professional aid should always be cheerfully and gratuitously afforded. Visits ought not, however, to be obtruded officiously; as such unasked civility may give rise to embarrassment, or interfere with that choice, on which

confidence depends. But, if a distant member of the faculty, whose circumstances are affluent, request attendance, and an honorarium be offered, it should not be declined; for no pecuniary obligation ought to be imposed, which the party receiving it would wish not to incur.

Art. III — Of the duties of the physician as respects vicarious offices.

1. The affairs of life, the pursuit of health, and the various accidents and contingencies to which a medical man is peculiarly exposed, sometimes require him temporarily to withdraw from his duties to his patients, and to request some of his professional brethren to officiate for him. Compliance with this request is an act of courtesy, which should always be performed with the utmost consideration for the interest and character of the family physician and when exercised for a short period, all the pecuniary obligations for such service should be awarded to him. But if a member of the profession neglect his business in quest of pleasure and amusement, he cannot be considered as entitled to the advantages of the frequent and long-continued exercise of this fraternal courtesy, without awarding to the physician who officiates the fees arising from the discharge of his professional duties.

Art. IV — Of the duties of physicians in regard to consultations.

1. A regular medical education furnishes the only presumptive evidence of professional abilities and acquirements, and ought to be the only acknowledged right of an individual to the exercise and honors of his profession. Nevertheless, as in consultation the good of the patient is the sole object in view, and this is often dependent on personal confidence, no intelligent regular practitioner, who has a license to practice from some medical board of known and acknowledged respectability, recognized by this association, and who is in good moral and

professional standing in the place in which he resides, should be fastidiously excluded from fellowship, or his aid refused in consultation, when it is requested by the patient. But no one can be considered as a regular practitioner, or a fit associate in consultation, whose practice is based on an exclusive dogma, to the rejection of the accumulated experience of the profession, and of the aids actually furnished by anatomy, physiology, pathology and organic chemistry.

2. In consultations no rivalry or jealousy should be indulged; candour, probity, and all due respect should be exercised towards the physician having charge of the case.

3. In consultations the attending physician should be the first to propose the necessary questions to the sick; after which the consulting physician should have the opportunity to make such further inquiries of the patient as may be necessary to satisfy him of the true character of the case. Both physicians should then retire to a private place for deliberation; and the one first in attendance should communicate the directions agreed upon to the patient or his friends, as well as any opinions which it may be thought proper to express. But no statement or discussion of it should take place before the patient or his friends, except in the presence of all the faculty attending, and by their common consent; and no opinions or prognostications should be delivered, which are not the result of previous deliberation and concurrence.

4. In consultations, the physician in attendance should deliver his opinion first; and when there are several consulting, they should deliver their opinions in the order in which they have been called in. No decision, however, should restrain the attending physician from making such variations in the mode of treatment, as any subsequent unexpected change in the character of the case may demand. But such variation and the reasons for it ought to be carefully detailed at the next meeting in consultation. The same privilege belongs also to the consulting physician if he is sent for in an emergency, when the regular

attendant is out of the way, and similar explanations must be made by him, at the next consultation.

5. The utmost punctuality should be observed in the visits of physicians when they are to hold consultation together, and this is generally practicable, for society has been considerate enough to allow the plea of a professional engagement to take precedence of all others, and to be an ample reason for the relinquishment of any present occupation. But as professional engagements may sometimes interfere, and delay one of the parties, the physician who first arrives should wait for his associate a reasonable period, after which the consultation should be considered as postponed to a new appointment. If it be the attending physician who is present, he will of course see the patient and prescribe; but if it be the consulting one, he should retire, except in case of emergency, or when he has been called from a considerable distance, in which latter case he may examine the patients, and give his opinion in writing and under seal, to be delivered to his associate.

6. In consultations, theoretical discussions should be avoided, as occasioning perplexity and loss of time. For there may be much diversity of opinion concerning speculative points, with perfect agreement in those modes of practice which are founded, not on hypothesis, but on experience and observation.

7. All discussions in consultation should be held as secret and confidential. Neither by words nor manner should any of the parties to a consultation assert or insinuate, that any part of the treatment pursued did not receive his assent. The responsibility must be equally divided between the medical attendants; they must equally share the credit of success as well as the blame of failure.

8. Should an irreconcilable diversity of opinion occur when several physicians are called upon to consult together, the opinion of the majority should be considered as decisive; but if the numbers be equal on each side, then the decision should rest with the attending physician. It may, moreover,

sometimes happen, that two physicians cannot agree in their views of the nature of a case, and the treatment to be pursued. This is a circumstance much to be deplored, and should always be avoided, if possible, by mutual concessions, as far as they can be justified by a conscientious regard for the dictates of judgment. But in the event of its occurrence, a third physician should, if practicable, be called to act as umpire, and if circumstances prevent the adoption of this course, it must be left to the patient to select the physician in whom he is most willing to confide. But as every physician relies upon the rectitude of his judgment, he should, when left in the minority, politely and consistently retire from any further deliberation in the consultation, or participation in the management of the case.

9. As circumstances sometimes occur to render a special consultation desirable, when the continued attendance of two physicians might be objectionable to the patient, the member of the faculty whose assistance is required in such cases, should sedulously guard against all future unsolicited attendance. As such consultations require an extraordinary portion both of time and attention, at least a double honorarium may be reasonably expected.

10. A physician who is called upon to consult, should observe the most honorable and scrupulous regard for the character and standing of the practitioner in attendance; the practice of the latter, if necessary, should be justified as far as it can be consistently with a conscientious regard for truth, and no hint or insinuation should be thrown out, which could impair the confidence reposed in him, or affect his reputation. The consulting physician should also carefully refrain from any of those extraordinary attentions or assiduities, which are too often practiced by the dishonest for the base purpose of gaining applause, or ingratiating themselves into the favor of families and individuals.

Art. V—Duties of physicians in cases of interference.

1. Medicine is a liberal profession, and those admitted into its ranks should found their expectations of practice upon the extent of their qualifications, not on intrigue or artifice.

2. A physician, in his intercourse with a patient under the care of another practitioner, should observe the strictest caution and reserve. No meddling inquiries should be made; no disingenuous hint given relative to the nature and treatment of his disorder; nor any course of conduct pursued that may directly or indirectly tend to diminish the trust reposed in the physician employed.

3. The same circumspection and reserve should be observed when from motives of business or friendship, a physician is prompted to visit an individual who is under the direction of another practitioner. Indeed, such visits should be avoided, except under peculiar circumstances, and when they are made, no particular inquiries should be instituted relative to the nature of the disease, or the remedies employed, but the topics of conversation should be as foreign to the case as circumstances will admit.

4. A physician ought not to take charge of, or prescribe for a patient who has recently been under the care of another member of the faculty in the same illness, except in cases of sudden emergency, or in consultation with the physician previously in attendance, or when the latter has relinquished the case or been regularly notified that his services are no longer desired. Under such circumstances no unjust and illiberal insinuations should be thrown out in relation to the conduct or practice previously pursued, which should be justified as far as candor, and regard for truth and probity will permit; for it often happens, that patients become dissatisfied when they do not experience immediate relief, and, as many diseases are naturally pro-

tracted, the want of success, in the first stage of treatment, affords no evidence of a lack of professional knowledge and skill.

5. When a physician is called to an urgent case, because the family attendant is not at hand, he ought, unless his assistance in consultation be desired, to resign the care of the patient to the latter immediately on his arrival.

6. It often happens, in cases of sudden illness, or of recent accidents and injuries, owing to the alarm and anxiety of friends, that a number of physicians are simultaneously sent for. Under these circumstances courtesy should assign the patient to the first who arrives, who should select from those present, any additional assistance that he may deem necessary. In all such cases, however, the practitioner who officiates, should request the family physician, if there be one, to be called, and unless his further attendance be requested, should resign the case to the latter on his arrival.

7. When a physician is called to the patient of another practitioner, in consequence of the sickness or absence of the latter, he ought, on the return or recovery of the regular attendant, and with the consent of the patient, to surrender the case.

8. A physician, when visiting a sick person in the country, may be desired to see a neighboring patient who is under the regular direction of another physician, in consequence of some sudden change or aggravation of symptoms. The conduct to be pursued on such an occasion is to give advice adapted to present circumstances; to interfere no farther than is absolutely necessary with the general plan of treatment; to assume no future direction, unless it be expressly desired; and, in this last case, to request an immediate consultation with the practitioner previously employed.

9. A wealthy physician should not give advice gratis to the affluent; because his doing so is an injury to his professional brethren. The of-

fice of a physician can never be supported as an exclusively beneficent one; and it is defrauding, in some degree, the common funds for its support, when fees are dispensed with, which might justly be claimed.

10. When a physician who has been engaged to attend a case of midwifery is absent, and another is sent for, if delivery is accomplished during the attendance of the latter, he is entitled to the fee, but should resign the patient to the practitioner first engaged.

Art. VI — Of differences between physicians.

1. Diversity of opinion, and opposition of interest, may, in the medical, as in other professions, sometimes occasion controversy and even contention. Whenever such cases unfortunately occur, and cannot be immediately terminated, they should be referred to the arbitration of a sufficient number of physicians, or a court-medical.

As peculiar reserve must be maintained by physicians towards the public, in regard to professional matters, and as there exist numerous points in medical ethics and etiquette through which the feeling of medical men may be painfully assailed in their intercourse with each other, and which cannot be understood or appreciated by general society, neither the subject matter of such differences nor the adjudication of the arbitrators should be made public, as publicity in a case of this nature may be personally injurious to the individuals concerned, and can hardly fail to bring discredit on the faculty.

Art. VII — Of pecuniary acknowledgments.

1. Some general rules should be adopted by the faculty, in every town or district, relative to pecuniary acknowledgments from their patients; and it should be deemed a point of honor to adhere to these rules with as much uniformity as varying circumstances will admit.

CHAPTER THREE

OF THE DUTIES OF THE PROFESSION TO THE PUBLIC, AND OF THE OBLIGATIONS OF THE PUBLIC TO THE PROFESSION.

Art. I — Duties of the profession to the public.

1. As good citizens, it is the duty of physicians to be ever vigilant for the welfare of the community, and to bear their part in sustaining its institutions and burdens: they should also be ever ready to give council to the public in relation to matters especially appertaining to their profession, as on subjects of medical police, public hygiene, and legal medicine. It is their province to enlighten the public in regard to quarantine regulations; the location, arrangement, and dietaries of hospitals, asylums, schools, prisons, and similar institutions, in relation to the medical police of towns, as drainage, ventilation, and in regard to measures for the prevention of epidemic and contagious diseases; and when pestilence prevails, it is their duty to face the danger, and to continue their labors for the alleviation of the suffering, even at the jeopardy of their own lives.

2. Medical men should also be always ready, when called on by the legally constituted authorities, to enlighten coroner's inquest and courts of justice, on subjects strictly medical, such as involve questions relating to sanity, legitimacy, murder by poisons or other violent means, and in regard to the various other subjects embraced in the science of Medical Jurisprudence. But in these cases, and especially where they are required to make a post-

mortem examination, it is just, in consequence of the time, labor and skill required, and the responsibility and risk they incur, that the public should award them a proper honorarium.

3. There is no profession, by the members of which, eleemosynary services are more liberally dispensed, than the medical, but justice requires that some limits should be placed to the performance of such good offices. Poverty, professional brotherhood, and certain public duties referred to in section 1 of this chapter, should always be recognized as presenting valid claims for gratuitous services; but neither institutions endowed by the public or by rich individuals, societies for mutual benefit, for the insurance of lives or for analogous purposes, nor any profession or occupation, can be admitted to possess such privilege. Nor can it be justly expected of physicians to furnish certificates of inability to serve on juries, to perform militia duty, or to testify to the state of health of persons wishing to insure their lives, obtain pensions or the like, without a pecuniary acknowledgment. But to individuals in indigent circumstances, such professional services should always be cheerfully and freely accorded.

4. It is the duty of physicians, who are frequent witnesses of the enormities committed by quackery, and the injury to health and even destruction of life caused by the use of

quack medicines, to enlighten the public on these subjects, to expose the injuries sustained by the unwary from the devices and pretensions of artful empirics and impostors. Physicians ought to use all the influence which they may possess, as professors in College of Pharmacy, and by exercising their option in regard to the shops to which their prescriptions shall be sent, to discourage the druggists and apothecaries from vending quack or secret medicines or from being in any way engaged in their manufacture and sale.

Art. II — Obligations of the public to Physicians.

1. The benefits accruing to the public directly and indirectly from the active and unwearied beneficence of the profession, are so numerous and important, that physicians are justly entitled to the utmost consideration and respect from the community. The public ought likewise to entertain a just appreciation of medical qualifications; to make a proper discrimination between true science and the assumptions of ignorance and empiricism, to afford every encouragement and facility for the acquisition of medical education, and no longer to allow the statute books to exhibit the anomaly of exacting knowledge from physicians, under liability to heavy penalties, and of making them obnoxious to punishment for resorting to the only means of obtaining it.

LUCRETIVS [96?-55 B.C.]

Nor does it matter a whit with what food the body is nourished, so long as you can digest what you take, and distribute it abroad through the limbs, and preserve the moisture of the stomach uninterrupted.

On the Nature of Things, IV. 630 (tr. by W. H. D. Rouse)

Toxic Encounters of the Dangerous Kind

THE NOT-ALWAYS-TRANQUILIZING PHENOTHIAZINES

As a class, the phenothiazines are a remarkable group of drugs and are among the most widely prescribed in this country. They are used as antipsychotic, anti-nausea, antiemetic and antihistaminic agents as well as for their ability to potentiate analgesics, sedatives and general anesthetics. Pharmacologically they are believed to block post-synaptic dopamine receptors and peripheral cholinergic systems as well as to exhibit anticholinergic activity in the brain and to induce adrenergic blockade and adrenergic action secondary to the inhibition of re-uptake of amines.

Phenothiazines are divided into three classes, based on side chain substitution, which are chemically distinct and produce different clinical effects.

Chemical		Trade Name
	<i>Aliphatic</i>	
chlorpromazine		Thorazine
promethazine		Phenergan
promazine		Sparine
triflupromazine		Vesprin
	<i>Piperidine</i>	
mesordazine		Serentil
thioridazine		Mellaril
piperacetazine		Quide
	<i>Piperazine</i>	
perphenazine		Trilifon
fluphenazine		Prolixin
prochlorperazine		Compazine
trifluoperazine		Stelazine
acetophenazine		Tindal

Because of their different properties their effects in overdose differ as well, although there is overlap.

	<i>Aliphatic</i>	<i>Piperidine</i>	<i>Piperazine</i>
Antipsychotic effects	+	++	+++
Extrapyramidal reactions	++	+	+++
Hypotension	+++	+++	+
Sedation	+++	+++	+
Cardiotoxicity	++	+++	++

It is possible to predict the major toxic reactions resulting from an overdose by knowing what class the phenothiazine is in. Thus the following generalizations concerning overdose can be made:

The *aliphatic group* is likely to produce

greatest CNS depression including coma, most likely to exhibit epileptogenic potential and most likely to produce hypotension. Little tendency for extrapyramidal reactions is exhibited.

The *piperidine group* has the least potential for producing extrapyramidal reactions, but causes remarkable sedation and hypotension and has the greatest potential for cardiotoxicity.

The *piperazine group* is probably the most interesting because it is by far the most likely to produce an extrapyramidal reaction (most probably on an idiosyncratic basis) and least likely to induce hypotension, seizures, sedation or cardiotoxicity. (It is probably the most antiemetic.)

Thus the reaction of a patient taking too much phenothiazine can be predicted if the offending drug can be identified. (The toxic doses of the phenothiazines are not well established however.) Toxic reactions include *hypotension*, *miosis* (very important diagnostically), *hypothermia* (also quite important diagnostically), *myocardial depression* (similar to quinidine), *CNS depression*, *pseudo-intestinal obstruction* and *urinary retention*.

By far the most dramatic and the most bizarre reactions are those of the *extrapyramidal system*. These are of three basic types: *akinesia* — weakness and muscular fatigue; *akathisia* — motor restlessness, jerking movements, "jitteriness," chewing movements; and *dystonia*, best defined as an extra-pyramidal disturbance consisting of uncoordinated and involuntary spasmodic movements of certain muscle groups.

The *acute dystonic* reaction is probably the most common phenothiazine reaction we see. Very miserable, uncomfortable patients present to the emergency room in a variety of dystonic postures: oculogyric, torticollis, opisthotonic, buccolingual, tortipelvic. In a typical acute dystonic reaction there is trismus, forced jaw openings, spasms of the tongue with occlusion and "growing" movements, arching and twisting of the back, bizarre posturing of the limbs, upward gaze paralysis and the hands in a "tetanic po-

sition." This reaction is marked by abrupt onset, periodicity (lasting 1-3 minutes), full consciousness usually and muscle pain during the "spells."

The patient appears to the unexperienced health care professional as if "possessed by demons" and needing an exorcist. These peculiar extrapyramidal reactions are more common in children especially those who are febrile and/or dehydrated. In younger patients the dystonia is more likely to be generalized whereas in adults it is often limited to the head, neck and arms.

Several other drugs can produce a similar acute dystonic reaction, the most prominent being halperidol (Haldol) but it has been reported following the use of trimethobenzamide (Tigan), thiethylperazine (Torecan), thioxanthines (Tartactan and Navane) and metoclopramide (Reglan). Many authorities suggest that the acute dystonic reaction is not necessarily a response to overdose but is in fact, an idiosyncratic reaction.

Diagnosis of phenothiazine toxicity can be aided by the history of ingestion, suspicious physical findings, the ferric chloride (Phenistix) urine test, and interestingly enough by a plain abdominal film — phenothiazines being radio-opaque. Blood levels do not correlate well with symptoms or prognosis.

The general treatment of phenothiazine overdose includes ipecac-induced emesis if the patient is awake, alert and has a gag reflex (apparently ipecac will induce

emesis in the face of the antiemetic properties of the phenothiazines especially if it is given early) or gastric lavage if emesis would be dangerous, activated charcoal, and a saline cathartic. Forced diuresis, dialysis, and hemoperfusion are not helpful. Specific treatment includes the correction of hypothermia; diazepam or phenytoin for seizure control; IV fluids and norepinephrine or methoxamine for hypotension (epinephrine or dopamine can make the hypotension worse); propranolol for supraventricular tachycardia; and NaHCO_3 , lidocaine or phenytoin for ventricular arrhythmias (avoid quinidine, procainamide or disopyramide).

The treatment for the acute dystonia can be most gratifying. To reverse this uncomfortable condition quickly, use benztropine mesylate (Cogentin) IV (currently considered by many the drug of choice) or diphenhydramine (Benadryl) IV which also produces a dramatic reversal of the process. If that fails call an exorcist or wait 24 hours because dystonia is for most patients, a self-limiting process.

Ronald B. Mack, M.D.
Department of Pediatrics
Bowman Gray School of Medicine
of Wake Forest University
Winston-Salem, N.C., and
Chairman, Committee on Accidents
and Poison Prevention
N.C. Chapter of the American
Academy of Pediatrics

PARACELSUS [1493?-1541]

Now they say when I come to a patient, I know not immediately what ails him, but I need time to find out. It is true. That they judge immediately is the fault of foolishness; for in the end the first judgment is false and from day to day they know the longer, the less, what it is, and make liars of themselves. Whereas I desire to approach from day to day, the longer, the closer to the truth. For with hidden diseases it is not as with the recognising of colours: in colours one sees well what is black, green, blue, etc. But if there were a curtain before it, thou also wouldst not know. To see through a curtain requires effort where there has been none before. What the eyes see can well be judged hurriedly, but what is hidden from the eyes it is in vain to conceive as though it were visible.

Seven Defensiones, "The Seventh Defense" (tr. by Lilian Temkin)



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Editorials

THANK YOU

Each year the conscientious efforts of those who review manuscripts for us make a better NORTH CAROLINA MEDICAL JOURNAL possible. Without their industry, we could not have a state medical society publication. The editor and the society stand in the debt of these reviewers who helped us in 1981.

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CLINICAL DISAGREEMENT

As noted elsewhere in this issue of the *Journal* (p 220), our clinical forebears were rightly concerned about the resolution of differences between physicians. In these times of subspecialization, such dangers can be even greater because of the impossibility of ever knowing enough in clinical medicine. But we have actually advanced medicine, scientifically and as an art, by encouraging dissent as an obligation.

For this to be possible, a mechanism has had to evolve toward what should be a fruitful tradition in patient care. The dynamics of this process have been recently analyzed by members of the Department of Clinical Epidemiology and Biostatistics of McMaster University in Hamilton, Ontario, and certain critical features identified.^{1,2}

If the disease process is to be understood and interrupted, its etiology must be recognized and means of minimizing serious consequences devised. The etiology of clinical disagreement has three aspects — the examiner (doer), the examined (source) and the examination (historical and physical). Features latent in each of these phases must be recognized (Table I).¹

The taking and giving of the history as representative of the doctor-patient relationship wherein confidences are being expressed and offered is a particularly critical event. Establishing good relationship

requires interpretation of body language and even more importantly appreciating that doctor and patient must share a vocabulary. Only then can the data supplied be logically considered and diagnostic hypotheses generated. Knowing when to listen and when to interrupt are absolutely necessary if a good and accurate history is to be obtained.

Assuming an accurate history and a definitive physical examination, what steps are to be taken to minimize disagreement and simplify management?² It must be assumed here that simplified management means better management.

First, "Match the diagnostic environment to the diagnostic task."

Then, "Seek corroboration of key findings:"

1. "Repeat key elements of your examination."
2. "Corroborate important findings with documents and witnesses."
3. "Confirm key clinical findings with appropriate diagnostic tests."
4. "Ask 'blinded' colleagues to examine your patient."

Next, " 'Blind' your assessments of diagnostic test data."

Naturally, "Report evidence as well as inference."

Certainly, "Use appropriate technical aids."

Finally, "Apply the social sciences, as well as the biologic sciences, of medicine."

While the founders of our society were rightly concerned about the ethics of consultation, the Canadian group refers to such situations only indirectly. After all if their directions are followed, there should be little difficulty for patient, physician or consultant in resolving such problems.

One phenomenon our forebears could not anticipate is the academic consultation, both as teaching tool and

Table I Etiology of clinical disagreement

The examiner

- Biologic variation in the senses
- The tendency to record inference rather than evidence
- Ensnarement by diagnostic classification schemes
- Entrapment by prior expectation

The examined

- Biologic variation in the system being examined
- Effects of illness and medication
- Memory and rumination

The examination

- Disruptive environments for the examination
- Disruptive interactions between examiners and examined
- Incorrect function or use of diagnostic tools

as a diagnostic or therapeutic exercise. The academic physician all too often has seen little more of the clinical world than his students or house officers and is occupied primarily with research, appreciating the continuity of disease in his patient more in the abstract than in the actuality.

The satisfactory etiquette for such situations is yet to evolve. The academic team is often engaged in a single medical episode so unbound by time that they sometimes feel compelled to do more than is necessary or can be justified. The problems met within such situations have been recently considered very nicely by Rudd³ whose review deserves careful attention from all involved in consultation and clinical disagreement.

J.H.F.

References

1. Department of Clinical Epidemiology and Biostatistics, McMaster University, Hamilton, Ont. Clinical disagreement: I. How often it occurs and why. *CMA J* 1980;123:499-504.
2. Department of Clinical Epidemiology and Biostatistics, McMaster University, Hamilton, Ont. Clinical disagreement: II. How to avoid it and how to learn from one's mistakes. *CMA J* 1980;123:613-7.
3. Rudd P. Contrasts in academic consultation. *Ann Intern Med* 1981; 94:537-8.

DOES THE SEBRIGHT BANTAM HAVE THE 'SEABRIGHT-BANTAM SYNDROME'?

Sebright bantam roosters develop female feathering on sexual maturation, a finding which led Albright¹ to postulate that some endocrinopathies could be attributed to failure of end-organ response to stimulation. He classified such patients with endocrine deficiencies as having the "Seabright-Bantam Syndrome." Although there seems to be some difference of opinion as to the preferred spelling — Sebright vs. Seabright

— it cannot be denied that Albright's postulate has been quite fruitful.

Pseudo-hypoparathyroidism differs from hypothyroidism in that patients with the former who are given parathyroid hormone intravenously do not have the expected phosphate diuresis nor do they excrete increased amounts of cyclic AMP. Congenital nephrogenic diabetes insipidus is also a member of the family because patients with it exhibit vasopressin-resistant polyuria and also do not increase cyclic AMP excretion when vasopressin is administered. Thus both can be considered as having a "Seabright-Bantam Syndrome" although the category no longer serves a useful clinical purpose.

But what of the Sebright bantam rooster? Why does he have such problems with his sexual decoration?² Surprisingly, in the Sebright bantam formation of male plumage is not directly under gonadal control. When a mature cock, however, is castrated, female feathering is lost and the male pattern regained. Female plumage is restored when testosterone is then given, but not with dihydrotestosterone treatment. Testosterone is converted in the bantam skin to estradiol which provokes the feminine response but dihydrotestosterone is not so it can maintain male feathering. We really can't tell whether the Sebright bantam has the "Seabright-Bantam Syndrome." Feathers never have the opportunity to respond to enough testosterone for us to find out.

J.H.F.

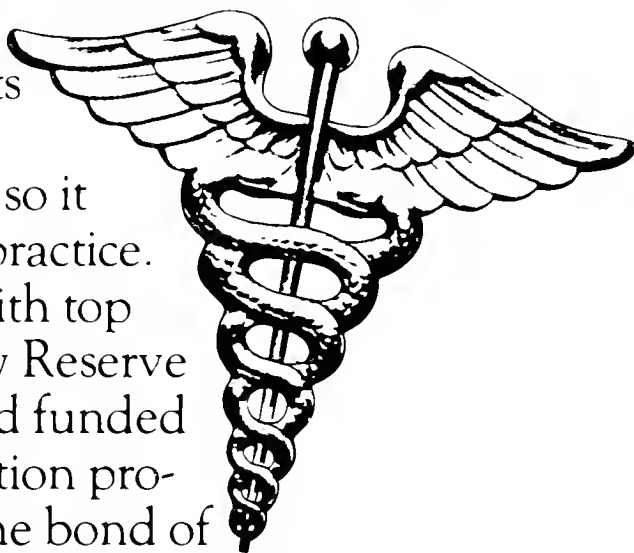
References

1. Albright F, Burnett CH, Smith PH, Parson W: Pseudo-hypoparathyroidism — an example of 'Seabright-Bantam Syndrome.' *Endocrinology* 1942;30:922-32.
2. George FW, Noble JF, Wilson JD: Female feathering in Sebright cocks is due to conversion of testosterone to estradiol in skin. *Science* 1981;213:557-9.

It therefore becomes necessary to view the phenomena of disease with a single, cautious, scrutinizing and unprejudiced eye; to trace, as far as can be done, every cause to its source, and to relieve the subject from embarrassing theories and hypotheses. From the limited nature of our powers, the phenomena are all we know; and it is the connection of two facts, in indissoluble and invariable succession, which constitutes the essence of causation, and it is the proper contemplation of this connection, which forms the real and solid acquisitions of science; for the whole operations of nature are nothing more than an uninterrupted series of phenomena in this relation. In tracing the union of a cause with its effect, the mind, from the constant observance of succession, invests the cause with a quality, called power, the result of an instinct, which nature has implanted in us, and it is to the proper estimate of this agent, to the assignment to every body, its proper degree of power, and to the faithful record for the good of others, of the effects it may produce, that men derive character in the pursuit of science, for accuracy of thought or the contrary; and it is also to the proper appreciation of the relative strength of the phenomena of nature, and the development of our resources, according to that appreciation, that history stamps with the epithets of folly or of wisdom, of weakness or of strength, the various nations and ages of the world. —*Elements of the Theory and Practice of Physic*, by George Gregory, M.D., with notes and additions, adapted to the Practice of the United States, by Nathaniel Potter, M.D., and S. Colhoun, M.D., Vol. I. Philadelphia, Towar & Hogan, 1829.

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From The Desk of The Managing Editor

ONLY YOU CAN BUILD MEMBERSHIP

In March of 1981 the North Carolina Board of Medical Examiners reported having 13,361 registered physicians, 8,639 of whom had North Carolina addresses. In April of 1981 the North Carolina Medical Society's membership totalled 5,454, making a difference of 3,185, the number of North Carolina physicians who are not members of the society. Of the non-members 1,110, almost 35%, live in the Durham-Orange County area; 370, in Forsyth County; 159, in Mecklenburg; 147, in Wake; 122, in Guilford; 118, in Buncombe; 113, in Cumberland; 52, in New Hanover; and 60, in Pitt County. Overall, 2,266, or 71.16%, of the 3,185 non-members live in a 10-county area.*

Competition for the professional's time and money seems to have an effect: these figures show that there is a fairly large group of physicians in our state who are not members of the medical society. Membership recruitment is an on-going, never-ending process, and our Committee on Membership, acutely aware of this fact, continues in its efforts to sign up new members. Some of those efforts include: identification and survey of the non-members, the development of a slide presentation by the Committee on Communications which is available for use as an introduction to the Medical Society, and the re-evaluation of the membership program.

Certainly, it is vital in a membership campaign to define the reasons people do not join the organization. However, some thoughts on why one does join should prove fruitful as well.

*These statistics were compiled by the North Carolina Medical Society staff.

With the encroachment by government on the medical profession, physicians must strive to retain their independence. Physicians want to decide for themselves how and where they practice, but they must strive to be heard above the many voices competing for a say in the direction that medicine will take. Organized medicine provides a voice that can be heard; indeed, it is the voice which speaks for the individual physician.

One must acknowledge that, from this perspective, quantity means strength, unity, effectiveness. While individual action is not to be discouraged, there are many complex issues today which require collective action. Professional standards cannot be set without the input of the profession. In our own state legislature, physicians have seen problems addressed and favorable solutions agreed upon through organized, collective action by their colleagues.

Physicians in organized medicine have reaped the benefits of the various services provided, information exchanged, issues debated and opinions supported. It is important to be a part of the group that is concerned with the practice of medicine and does something about those concerns.

Defining how both members and non-members view the North Carolina Medical Society is a necessary part of membership recruitment. But only members can build membership. In the interest of the physician, in the interest of the patient, in the interest of the public health, call a prospective member and urge him or her to join. For information contact your county medical society or the North Carolina Medical Society, Box 27167, Raleigh, N.C. 27611 (919-833-3836).

A.A.H.

RUDOLF VIRCHOW [1821-1902]

Ever since we recognized that diseases are neither self-subsistent, circumscribed, autonomous organisms, nor entities which have forced their way into the body, nor parasites rooted on it, but . . . the course of physiological phenomena under altered conditions . . . the goal of therapy has had to be the maintenance or the reestablishment of normal physiological conditions.

Disease, Life, and Man, "Standpoints in Scientific Medicine"
(tr. by L. J. Rather)

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†Due to susceptible organisms.

1. Ginsburg CM, McCracken GH Jr, Zweighaft TC, Clinch JC. Comparative pharmacokinetics of cyclacillin and amoxicillin in infants and children. *Antimicrob Ag Chemother* 17:1095-1098 (June) 1981.

2. Multicenter trials. Data to be published.

See important information on page after next.

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Indications

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RESPIRATORY TRACT

Tonsillitis and pharyngitis caused by Group A beta-hemolytic streptococci

Branchitis and pneumonia caused by *S. pneumoniae* (formerly *D. pneumoniae*)

Otitis media caused by *S. pneumoniae* (formerly *D. pneumoniae*) and *H. influenzae*

Acute exacerbation of chronic bronchitis caused by *H. influenzae**

*Though clinical improvement has been shown, bacteriologic cures cannot be expected in all patients with chronic respiratory disease due to *H. influenzae*.

SKIN AND SKIN STRUCTURES (integumentary) infections caused by Group A beta-hemolytic streptococci and staphylococci, non-penicillinase producers.

URINARY TRACT INFECTIONS caused by *E. coli* and *P. mirabilis*. (This drug should not be used in any *E. coli* and *P. mirabilis* infections other than urinary tract.)

NOTE: Perform cultures and susceptibility tests initially and during treatment to monitor effectiveness of therapy and susceptibility of bacterio. Therapy may be instituted prior to results of sensitivity testing.

Contraindications Contraindicated in individuals with history of an allergic reaction to penicillins.

Warnings Cyclocillin should only be prescribed for the indications listed herein.

Cyclocillin has less *in vitro* activity than other drugs of the ampicillin class. However, clinical trials demonstrated it is efficacious for recommended indications.

Serious and occasional fatal hypersensitivity (anaphylactoid) reactions have been reported in patients on penicillin. Although anaphylaxis is more frequent following parenteral use, it has occurred in patients on oral penicillins. These reactions are more apt to occur in individuals with history of sensitivity to multiple allergens. There are reports of patients with history of penicillin hypersensitivity reactions who experienced severe hypersensitivity reactions when treated with a cephalosporin. Before penicillin therapy, carefully inquire about previous hypersensitivity reactions to penicillins, cephalosporins and other allergens. If allergic reaction occurs, discontinue drug and initiate appropriate therapy. Serious anaphylactoid reactions require immediate emergency treatment with epinephrine. Oxygen, I.V. steroids, airway management, including intubation, should also be administered as indicated.

Precautions Prolonged use of antibiotics may promote overgrowth of nonsusceptible organisms. If superinfection occurs, take appropriate measures.

PREGNANCY: Pregnancy Category B. Reproduction studies performed in mice and rats at doses up to 10 times the human dose revealed no evidence of impaired fertility or harm to the fetus due to cyclocillin. There are, however, no adequate and well-controlled studies in pregnant women. Because animal reproduction studies are not always predictive of human response, use this drug during pregnancy only if clearly needed.

NURSING MOTHERS: It is not known whether this drug is excreted in human milk. Because many drugs are, exercise caution when cyclocillin is given to a nursing woman.

Adverse Reactions Oral cyclocillin is generally well tolerated. As with other penicillins, untoward sensitivity reactions are likely, particularly in those who previously demonstrated penicillin hypersensitivity or with history of allergy, asthma, hay fever, or urticaria. Adverse reactions reported with cyclocillin: diarrhea (in approximately 1 out of 20 patients treated), nausea and vomiting (in approximately 1 in 50), and skin rash (in approximately 1 in 60). Isolated instances of headache, dizziness, abdominal pain, vaginitis, and urticaria have been reported. (See WARNINGS) Other less frequent adverse reactions which may occur and are reported with other penicillins are anemia, thrombocytopenia, thrombocytopenic purpura, leukopenia, neutropenia and eosinophilia. These reactions are usually reversible on discontinuation of therapy.

As with other semisynthetic penicillins, SGOT elevations have been reported.

As with antibiotic therapy generally, continue treatment at least 48 to 72 hours after patient becomes asymptomatic or until bacterial eradication is evidenced. In Group A beta-hemolytic streptococcal infections, at least 10 days' treatment is recommended to guard against risk of rheumatic fever or glomerulonephritis. In chronic urinary tract infection, frequent bacteriologic and clinical appraisal is necessary during therapy and possibly for several months after. Persistent infection may require treatment for several weeks.

Cyclocillin is not indicated in children under 2 months of age.

Patients with Renal Failure Cyclocillin may be safely administered to patients with reduced renal function. Due to prolonged serum half-life, patients with various degrees of renal impairment may require change in dosage level (see DOSAGE AND ADMINISTRATION in package insert).

Dosage (Give in equally spaced doses)

INFECTION	ADULTS	CHILDREN*
Respiratory Tract		
Tonsillitis & Pharyngitis	250 mg q.i.d.	body weight < 20 kg (44 lbs) 125 mg q.i.d. body weight > 20 kg (44 lbs) 250 mg q.i.d.
Branchitis and Pneumonia		
Mild or Moderate Infections	250 mg q.i.d.	50 mg/kg/day q.i.d.
Chronic Infections	500 mg q.i.d.	100 mg/kg/day q.i.d.
Otitis Media	250 mg to 500 mg q.i.d.†	50 to 100 mg/kg/day†
Skin & Skin Structures	250 mg to 500 mg q.i.d.†	50 to 100 mg/kg/day†
Urinary Tract	500 mg q.i.d.	100 mg/kg/day

*Dosage should not result in a dose higher than that for adults.
†depending on severity

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LETTER FROM THE EDITOR

It has been brought to the editor's attention that his Report from West Germany in the October issue of the *Journal* contained a serious error. According to that report subcutaneous infections were available in West Germany in 1974, at the remarkably low price of 3 DM. Intravenous infections were somewhat dearer, priced at 4 DM. Of course injections, not infections, was the word intended. The eminent Viennese speculator, Dr. Sigmund Freud, gave little or no at-

tention in his *Psychopathology of Everyday Life* to typographical errors, being most concerned with slips of the tongue. So the editor can offer only an apology, not an explanation, for such a serious lapse.

While on the subject of injections, it is worth noting that we have given little attention to the benefactors of mankind who devised hollow needles and developed them for clinical use else the subject would not have come up at all.

J.H.F.

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Bulletin Board

What? When? Where?

Please note: 1. The Continuing Medical Education Programs at Bowman Gray, Duke, East Carolina and UNC Schools of Medicine, Dorothea Dix, and Burroughs Wellcome Company are accredited by the American Medical Association. Therefore CME programs sponsored or cosponsored by these schools automatically qualify for AMA Category I credit toward the AMA's Physician Recognition Award, and for North Carolina Medical Society Category A credit. Where AAFP credit has been requested or obtained, this also is indicated. 2. The "place" and "sponsor" are indicated for a program only when these differ from the place and source to write "for information."

April 2-3

"Frank R. Lock Symposium in Obstetrics & Gynecology"

Place: Bowman Gray School of Medicine

Fee: \$150

Credit: 10 hours. AAFP applied for

Info: Emery C. Miller, M.D., Associate Dean for Continuing Education, Bowman Gray School of Medicine, 300 S. Hawthorne Road, Winston-Salem, NC 27103, 919-748-4450

April 5-6

"Genetic Mechanisms in Chemical Carcinogenesis"

Place: Chapel Hill

Info: Ms. Mimi Minkoff, Cancer Research Center, Box 30, MacNider Bldg., UNC-CH, Chapel Hill, NC 27514

April 6

"Greensboro Academy of Medicine Spring Symposium — Combined Approach to Common Medical Problems"

Place: Jefferson Standard Country Club, Greensboro

Credit: 6 hours

Info: W. H. Turner, M.D., 919-373-1383

April 5-7

"Options and Controversies in Coronary Disease"

Place: Pinehurst Hotel and Country Club

Fee: \$225

Credit: 18 hours. AAFP will be applied for

Info: Betty Neilson, 231 MacNider Bldg., 202H, UNC-CH School of Medicine, Chapel Hill, NC 27514

April 14

"Infectious Diseases Update 1982"

Place: Pitt County Memorial Hospital Auditorium, Greenville

Fee: \$50

Credit: 6 hours. AAFP applied for

Info: F. M. Simmons Patterson, M.D., Assistant Dean for Continuing Medical Education, East Carolina University School of Medicine, Greenville, NC 27834

April 19-22

"Current Concepts in Diagnostic Imaging"

Place: Duke University Medical Center

Fee: \$400 (\$200 if in training)

Credit: 30 hours

Info: Donald R. Kirks, M.D., Program Director, Department of Radiology—Box 3834, Duke University Medical Center, Durham, NC 27710

April 23-24

"Practical Pediatrics"

Place: Bowman Gray School of Medicine

Fee: \$50

Credit: 9 hours. AAFP applied for

Info: Emery C. Miller, M.D., Associate Dean for Continuing Education, Bowman Gray School of Medicine, 300 S. Hawthorne Road, Winston-Salem, NC 27103, 919-748-4450

April 24-25

"7th Annual Radiology Update"

Place: Bowman Gray School of Medicine

Fee: \$75

Credit: 9 hours

Info: Emery C. Miller, M.D., Associate Dean for Continuing Education, Bowman Gray School of Medicine, 300 S. Hawthorne Road, Winston-Salem, NC 27103, 919-748-4450

April 29

"11th Annual New Bern Symposium: Emergency Medicine"

Place: Ramada Inn, New Bern

Info: William B. Hunt, Jr., M.D., Symposium Director, P.O. Box 2157, New Bern, NC 28560

May 14-15

"Chronic Disease Prevention and Health Promotion"

Place: Asheville

Info: Paula Schubert, Office of Continuing Ed., UNC-CH School of Public Health 251-H, Chapel Hill, NC 27514, 919-966-4032

May 19-21

"North Carolina Heart Association Scientific Sessions"

Place: Winston-Salem

Info: The N.C. Heart Association, PO Box 2636, Chapel Hill, NC 27514, 919-968-4453

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May 21

"Pediatrics Day 1982"

Place: Pitt County Memorial Hospital Auditorium, Greenville

Fee: \$50

Credit: 6 hours, AAFP applied for

Info: F. M. Simmons Patterson, M.D., Assistant Dean for Continuing Medical Education, East Carolina University School of Medicine, Greenville, NC 27834

May 21-23

"Eleventh Annual Pediatric Pulmonary Disease Conference"

Place: Searle Center, Duke University Medical Center

Fee: \$50

Credit: 12 hours

Info: Alexander Spock, M.D., Box 2994, Duke University Medical Center, Durham, NC 27710, 919-681-3364

Out of State — Southeastern Region

March 30-April 2

"Recent Advances in Gastroenterology: Pathophysiology, Diagnosis and Treatment"

Place: Bethesda, Maryland

Info: Postgraduate Courses Department, American College of Physicians, 4200 Pine Street, Philadelphia, PA 19104

March 31-April 2

"Current Concepts of Clinical Infectious Diseases"

Place: Charlottesville, Virginia

Info: Postgraduate Courses Department, American College of Physicians, 4200 Pine Street, Philadelphia, PA 19104

March 31-April 2

"Internal Medicine-Advances and Review"

Place: Baltimore, Maryland

Info: Postgraduate Courses Department, American College of Physicians, 4200 Pine Street, Philadelphia, PA 19104

April 4-6

"National Conference on Primary Care"

Place: Jackson, Mississippi

Credit: 15 hours, AAFP

Info: Nellie Brown, NRPCA, Box 1211, Waterville, ME 04901-1211, 207-873-7784

April 16-18

"EKG Interpretation and Arrhythmia Management"

Place: Williamsburg, Virginia

Fee: \$245

Credit: 13 hours, Category 1; AAFP

Info: International Medical Education Corp., 64 Inverness Drive East, Englewood, Colo. 80112, 800-525-8651

April 22-24

"Pediatric Springfest"

Place: Williamsburg, Virginia

Info: Kathy E. Johnson, Box 48, MCV Station, Richmond, VA 23298, 804-786-0494

April 23-24

"Arrhythmia and Cardiac Ischemia: Diagnosis and Management"

Place: Atlanta, Georgia

Fee: \$245

Credit: 13 hours, Category 1; 13 hours, AAFP

Info: International Medical Education Corp., 64 Inverness Drive, East, Englewood, Colo. 80112, 800-525-8651

April 23-25

"Emergency Medicine for the Primary Care Physician"

Place: Williamsburg, Virginia

Fee: \$195

Credit: 17 hours

Info: Glenda Snow, Box 48, MCV Station, Richmond, VA 23298, 804-786-0494

April 25-29

"American College of Cardiology Annual Scientific Session"

Place: Atlanta, Georgia

Info: Meeting Services Dept., American College of Cardiology, 9111 Old Georgetown Road, Bethesda, MD 20814

May 5-8

"63rd Annual Meeting of the Virginia Society of Ophthalmology and Otolaryngology, Inc."

Place: Williamsburg, Virginia

Info: Donna Strawderman, 4205 Dover Road, Richmond, VA 23221, 804-353-2721

May 12-14

"Clinical Auscultation of the Heart"

Place: Georgetown University Medical Center, Washington, D.C.

Info: Extramural Programs Department, American College of Cardiology, 911 Old Georgetown Road, Bethesda, MD 20014

June 10-12

"Rehabilitation of the Brain-Injured Adult"

Place: Williamsburg, Virginia

Info: Ellen F. Walsh, School of Allied Health Professions, Box 233, MCV Station, Richmond, VA 23298, 804-231-9011

The items listed in the above column are for the three months immediately following the month of publication. Requests for listing should be received by "WHAT? WHEN? WHERE?", P.O. Box 27167, Raleigh 27611, two months prior to the month in which they are to appear. A "Request for listing" form is available upon request.

North Carolina Medical Society Auxiliary

WOMEN PHYSICIANS AND THE IMPLICATIONS FOR THE AUXILIARY

A study of the 126 United States medical schools by the Association of American Medical Colleges shows that female enrollments in medical school are at a record high. The number of women has increased consistently over the past ten years. The 1981-82 first year class nationwide is composed of 5,317 women or 30.8% of the total. In 1969-70, 952 women (9.2% of the total) were accepted to the first year class of medical schools in the United States.

In 1973 the AMA Auxiliary Bylaws were revised to include male spouses in the membership of the AMA Auxiliary. Eight years ago, the AMA Auxiliary House of Delegates approved a name change from "Woman's Auxiliary to the AMA" to the "AMA Auxiliary." By 1981 approximately 65 men had joined the AMA



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Auxiliary. In the November issue of FACETS, the AMA Auxiliary magazine, an article on the future of the AMA Auxiliary cites the potential for more male members because of the increasing numbers of female physicians.

Why would a male spouse join the auxiliary, an organization that has been identified as, and has been, a woman's organization for 50 years? There will be those who feel that they want to support their wife's profession and become better acquainted with the medical community. Others may see it as a way to do meaningful volunteer service in their community. Male physicians who are married to female physicians may view their memberships in both the medical society and auxiliary as an effective communications bridge. And there are always those who will join to be the first male in the group and "just for the fun of it."

In the May 1981 issue of FACETS the article, "Male Auxiliary Members: Who They Are and Why They're Involved," reported that "the vast majority

of auxiliaries have been delighted with their new male auxiliarians, welcoming them with open arms." It is logical that the male members will bring different perspectives, skills and knowledge acquired in their respective fields. One county auxiliary president in Texas says, "It's a joy to work together because we complement each other so well."

Other positive results might be a different concept of auxiliary work by the public since the addition of men would eliminate the stereotype of a "woman's club." Instead, the auxiliaries would receive well-deserved credit for community projects and service.

For those auxiliaries that see a need to interest men in membership, the first step would be scheduling meetings so that a broader based membership could be achieved. This is becoming a topic of discussion among women themselves since so many auxiliary members are gainfully employed and both older and younger prospective members cannot attend daytime meetings. Programs also would have to appeal to both

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overnment-funded research
n hypertension
orth reading about?



men and women. As with any prospective member, the greatest incentive for joining will be a personal invitation delivered with a sincere desire to integrate male members into the organization.

As the number of female physicians increases, the number of prospective female members for the AMA Auxiliary will decline. To keep the auxiliary a vital,

growing organization it will be necessary to attract male spouses. The National AMA Auxiliary has recognized this need for nine years — since male spouse membership was approved. It is time for county auxiliaries to consider how they can meet the challenge.

Anita D. Taylor
Winston-Salem, N.C.

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News Notes

Duke University Medical Center

The new DUPAC (Duke University's Preventive Approach to Cardiovascular Disease) Activities Center opened in January. The center is located on top of Wallace Wade Stadium on the University's West Campus.

The DUPAC Activities Center — which also houses the press box for the Blue Devils' home games — provides 30,000 square feet of space for health-related activities. The new center makes it possible for the first time for DUPAC to offer memberships to persons in the Durham community who are not necessarily at

risk of heart disease, but who are interested in a medically supervised health enhancement program.

Included in the center are a swimming pool for tethered and lap swimming, air conditioned locker rooms with individual kit lockers, dressing rooms, stationary bicycles, a banked indoor jogging track, exercise equipment and Jacuzzi baths and saunas for men and women. The center also has a cafeteria which will serve well-balanced breakfasts and lunches for DUPAC members Mondays through Fridays.

Dr. R. Sanders Williams, assistant professor of cardiology is medical director of DUPAC. Paul Koisch is administrative director.

DUPAC memberships are \$400. Additional family members pay \$350 a year to join.

A physician known internationally for his expertise in health policy matters has been appointed director of

1977, when
the Veterans Administration
compared Step-2
regimens in 450 mild
hypertensive patients,
which regimen was
proven most effective?



Duke University's Center for Health and Clinical Policy. Research in health policy and courses in health policy will be offered through the center, which formally opened in January.

Dr. David M. Eddy is an advisor or consultant to numerous national and international health organizations including the World Health Organization, the National Cancer Institute and the National Commission for Cancer Prevention and Detection.

He is the first physician to receive the Lanchester Prize, given by the Operations Research Society of America (ORS) for the most important contribution to the field of applied mathematics and systems analysis. He received the prize this fall for his book on screening for cancer. He is the author of the American Cancer Society report that led to the new recommendations for cancer screening.

"We are fortunate to have an internationally recognized specialist such as Dr. Eddy to direct this new program," said Dr. William G. Anlyan, vice president for health affairs. "He was selected because of his active interest in health policy and his active interest in health policy research. It is crucial that private medical centers such as Duke play an active role in influencing health care policy."

Eddy said each of the center's professors also will have appointments in other departments within the university. "The courses offered through these departments will be designed to complete the curriculum in health policy analysis here at Duke," he said.

A Duke University Medical Center researcher says a disease afflicting homosexual men may be the result of drug abuse — not repeated exposure to a virus, as some researchers contend.

But Dr. David T. Durack of Duke's communicable disease section said it would be hard to discover which drug, if any, reduces natural immunity among the victims because some victims use recreational drugs.

Three studies reported Dec. 10 in the *New England Journal of Medicine* documented the disease in 180 victims, 165 of which were young homosexual men. So far, 75 of the victims have died, and most of the deaths have been attributed to rare forms of pneumonia and cancer.

Patients showed an unusual resistance to treatment, Durack said. About a dozen microbes considered harmless in normal adults became life-threatening due to the mysterious breakdown of the body's disease-fighting mechanism, he said.

Durack said in-depth research currently is being conducted by the Centers for Disease Control in Atlanta to unravel the individual cases and come up with a common factor for the disease outbreak.

Meanwhile, he said, young homosexual men living in large cities and having many sexual partners have the greatest risk and should be wary of any symptoms.

"Someone like that who detects a slight weight loss, a fever or any kind of infection should consider seeing a doctor," Durack said. "If he develops pneumonia, I

would advise that the doctor investigate it very carefully."

A distinguished professorship has been established at the medical center to honor a recently retired Duke neurosurgeon, Dr. Guy Leary Odom. Odom, a James B. Duke Professor of Neurosurgery, retired from active faculty status Aug. 31 after 38 years at Duke.

The distinguished chair will support a full professor in neurosurgery.

"The Odom Chair is extremely important to Duke because it will perpetually honor a contributor who has risen to the very top of his field, nationally and internationally, as a teacher, investigator and clinical neurosurgeon," said Dr. David C. Sabiston Jr., James B. Duke Professor of Surgery and chairman of the department. "Moreover it will establish an unusually high standard of excellence far into the future for those who follow him in neurosurgery at Duke."

Odom served as chief of the division of neurosurgery from 1960-1976 and was appointed James B. Duke Professor of Neurosurgery in 1974. He is an active member of more than 30 professional committees and societies.

W. David Sedwick, assistant medical research professor in the departments of Medicine and Microbiology, received a \$67,157 research grant from the National Cancer Institute. He is studying "Anti-folate-Induced Misincorporation of UDR in Human Cell."

Roger J. Kurlander, assistant professor of hematology and medical oncology in the Department of Medicine, received an \$81,398 grant for his program "Depletion of PC Receptors during Immune Clearance" from the National Institute of Allergy and Infectious Diseases.

Rebecca H. Buckley, professor in the departments of Pediatrics and Microbiology and Immunology, received a \$73,417 grant from the National Institute of Allergy and Infectious Diseases. Buckley is studying "Immunoregulation in Atopic Eczema."

Ilene C. Siegler, associate professor of medical psychology and training coordinator for the Center for the Study of Aging and Human Development, received a \$96,375 grant from the National Institute of Mental Health. Siegler is studying adult human development and adaption.

George K. Michalopoulos, assistant professor in the Department of Pathology, received a \$103,870 grant from the National Cancer Institute. Michalopoulos is studying "Cell Culture and Transplantation of Human Hepatocytes."

Ralph R. Bollinger, assistant professor in the division of general and thoracic surgery, received a \$48,943 grant from the National Institute of Allergy and Infectious Diseases to study "Tolerance Induction with HC Antigen-Conjugates."

Charles Tanford, professor in the Department of

Biochemistry, received an \$80,150 grant to study protein interactions and biological function. The grant was awarded by the National Institute of Arthritis, Metabolism and Digestive Diseases.

Lee Tyrey, associate professor in the Department of Obstetrics and Gynecology, received a \$74,391 research grant from the National Institute on Drug Abuse. Tyrey is studying "Cannabinoid Effects on Female Reproductive Function."

Paul L. Modrich, associate professor of biochemistry, received a \$38,362 grant from the National Cancer Institute for his program, "Molecular Basis of Ecori DNA Restriction Modification."

Richard D. Weiner, assistant professor of biological psychology in the Department of Psychiatry, received a \$75,644 grant from the National Institute of Mental Health. Weiner is studying the long term effects of electroconvulsive therapy.

Walter R. Guild, professor in the Department of Biochemistry, received a \$60,433 grant for the studies

in "Drug Resistance and Conjunction in *Pneumococcus*" from the National Institute of Allergy and Infectious Diseases.

John W. Moore, professor of physiology, received a \$68,650 grant from the National Institute of Neurological and Communicative Disorders and Stroke. Moore is studying "Physiology of Excitable Membranes."

David L. Straight, research associate in the division of general medicine, was awarded a \$19,040 research service award from the National Heart, Lung and Blood Institute to study thrombosis.

David S. Pisetsky, assistant professor in the division of rheumatic and genetic diseases and the division of immunology, received a \$33,200 grant from the National Institute of Arthritis, Metabolism and Digestive Diseases. Pisetsky is studying idiotype expression in murine autoimmune disease. Pisetsky also received a \$24,200 grant from the March of Dimes Birth Defects Foundation.

In 1979, when results were published for the five-year, 10,000-patient Hypertension Detection and Follow-up Program (HDFP study), which Step-2 regimen was preferred and was deemed effective without significant adverse effects?²



Dolph O. Adams, professor of pathology, received a \$397,783 grant from the National Cancer Institute for his project, "Macrophage Activation: Development and Regulation."

Mary A. Morris, assistant professor of pediatrics, received a \$16,369 research award from the National Institute of Arthritis, Diabetes, Digestive and Kidney Diseases for her study of diabetes mellitus.

Rona L. Levy, in the division of medical psychology, received a \$35,000 national research service award from the National Heart, Lung and Blood Institute to study hypertension.

Michael K. Pasque, in the division of general and thoracic surgery, received a \$20,468 national research service award from the National Heart, Lung and Blood Institute to study coronary heart disease.

Fidel Ramon, assistant professor in the Department of Physiology, received a \$2,442 grant from the National Heart, Lung and Blood Institute for his program, "A Model System for Cardiac Action Potentials."

Nels C. Anderson Jr., associate professor in the Department of Physiology and assistant professor of obstetrics and gynecology, received a \$36,872 grant for his program, "Biophysics of Parathyroid Calcium Sensing Mechanism" from the National Institute of Arthritis, Metabolism and Digestive Diseases.

John V. Salzano, professor of physiology, received a research award from the National Heart, Lung and Blood Institute for \$54,092. The funds will support research on "Regulation of Airway Smooth Muscle Tone."

Thomas R. Snow, assistant medical research professor of physiology, received a \$52,078 research award from the National Heart, Lung and Blood Institute to study "Mechanisms of Myocardial Response to Hypoxia."

Dolph O. Adams, professor of pathology, was awarded a research grant of \$70,862 from the National Cancer Institute to study tumoricidal effects of macrophages.

James E. Nidel, assistant professor of hematology and medical oncology, received a \$92,694 grant from the National Institute of Allergy and Infectious Diseases for his program "Human Myeloid Chemotactic Receptor: Structure-Function." He also received a Basil O'Connor Starter Research Grant for \$24,988 from the March of Dimes Birth Defects Foundation to study the development and nature of cell-surface receptors.

Ralph Snyderman, professor of medicine, received a \$49,241 service award from the National Institute of Allergy and Infectious Diseases for work on inflammatory and immunological diseases.

John J. Gallagher, professor of cardiology, received a \$133,011 research award from the National Heart, Lung and Blood Institute for the study of arrhythmias.

Saul M. Schanberg, professor of pharmacology, received a National Institute of Mental Health award for \$175,645 to study drugs, hormones and brain function.

James A. Green, assistant medical research profes-

sor in the division of medical psychiatry, received a \$13,034 grant from the National Institute of Mental Health. The grant will support study of "Visual Attention Vocalization and Social Communication."

D. Bernard Amos, professor of immunology, received from the National Institute of Allergy and Infectious Diseases a \$31,995 grant for his study, "Fundamentals of the Mechanisms of Homograft Immunity."

Wolfgang K. Joklik, professor and chairman of the Department of Microbiology and Immunology, was awarded a \$177,902 research grant from the National Institute of Allergy and Infectious Diseases. Joklik will investigate "Macromolecular Synthesis in Virus-Infected Cells."

William W. Anderson, in the Department of Pharmacology, received a \$19,040 national research service award from the National Institute of Neurological and Communicative Disorders and Stroke. Anderson is studying neurophysiology.

Bowman Gray School of Medicine Wake Forest University

Dr. Courtland H. Davis Jr., professor of neurosurgery at the Bowman Gray School of Medicine, has been named chief of professional services at North Carolina Baptist Hospital.

He succeeds Dr. Robert N. Headley, professor of medicine (cardiology), who held the position for four years. Headley will continue to serve as an associate chief of professional services.

Dr. Thomas H. Irving, professor and chairman of the Department of Anesthesia and a former chief of professional services, also serves as an associate chief of professional services.

Davis was appointed to the Bowman Gray faculty in 1952, and has served as an associate chief of professional services since 1975. He is a past president of the Neurosurgical Society of America and the Southern Neurosurgical Society. Currently, he is vice president of the American Academy of Neurological Surgery.

The National Cancer Institute has awarded a \$1 million grant to the Bowman Gray School of Medicine to train cancer researchers.

The program, supported by the five-year grant, will provide three years of additional training to those who already hold the Ph.D. or M.D. degrees and four years of training for students pursuing the Ph.D. degree.

The grant supports the type of academic training which is critical if progress is to be made in understanding and treating the many kinds of cancer.

The multidisciplinary program involves the departments of biochemistry, pathology, microbiology and immunology, internal medicine, radiology and obstetrics and gynecology.

Initially, four graduate students and three postdoc-

toral fellows will be enrolled in the training program. Eventually, 14 people will be in the program each year.

The four areas of cancer research which the program will emphasize are oncogenesis, cancer cell biology, the interaction of tumors and cancer victims, and experimental therapeutics. They are the areas of expertise within the Bowman Gray's Cancer Research Center.

A basic research project at Bowman Gray has uncovered evidence in animals that the brain's aging process can be slowed through drug therapy.

The work was conducted by Dr. Philip Landfield, a neurophysiologist, and by a graduate student and laboratory technician.

The research, supported by a grant from the National Institute on Aging, opens up the possibility that

the human brain aging process eventually may respond to drug therapy. The findings are the first based on comprehensive morphologic and behavioral studies to show that brain aging is not a fixed process.

In work with rats, Landfield's group demonstrated that steroids produced by the adrenal gland have a role in causing brain tissue to age and that the removal of the adrenal gland has a significant effect on retarding brain aging.

The work also showed that two chemical compounds which stimulate brain cell activity also retard the brain aging process.

Removal of the adrenal gland produced the most dramatic effects on the brain. Giving the chemical compounds produced less dramatic but more consistent results, and they improved the learning abilities in aged rats.

Landfield's work was reported in the journal "Science."

In 1980, when the Joint National Committee on Detection, Evaluation, and Treatment of High Blood Pressure published their recommendations, which Step-2 regimen best met their criteria for effectiveness, safety, simplicity of titration, convenience, and economy?³



Two prominent North Carolina industrialists have been appointed to the Board of Visitors of the Bowman Gray/Baptist Hospital Medical Center.

They are Claude S. Ramsey Jr. of Asheville, chairman of the board and president of Akzona Inc., and Herbert Brenner of Winston-Salem, executive vice president of Brenner Companies, Inc.

The new members join 15 other business, professional and civic leaders already on the board.

The Board of Visitors is an official advisory council to the administration of the medical center and to the Boards of Trustees of Wake Forest University and North Carolina Baptist Hospital.

Three assistant professors and several instructors have been appointed to the fulltime faculty at Bowman Gray.

The assistant professors are Dr. Maureen M.

Aaron, family medicine; Dr. John S. Parks, comparative medicine; and Dr. Rosalind M. Vaz, pediatrics.

Aaron will develop a geriatrics curriculum for residents in the Department of Family and Community Medicine. She holds the M.D. degree from the University of Saskatchewan College of Medicine.

Parks is a biochemist and biophysicist whose work at Bowman Gray will be in the school's Specialized Center of Research (SCOR) in Arteriosclerosis. His interest is lipoprotein metabolism and biophysical studies of non-human primates. He holds the M.D. and Ph.D. degrees from Wake Forest University.

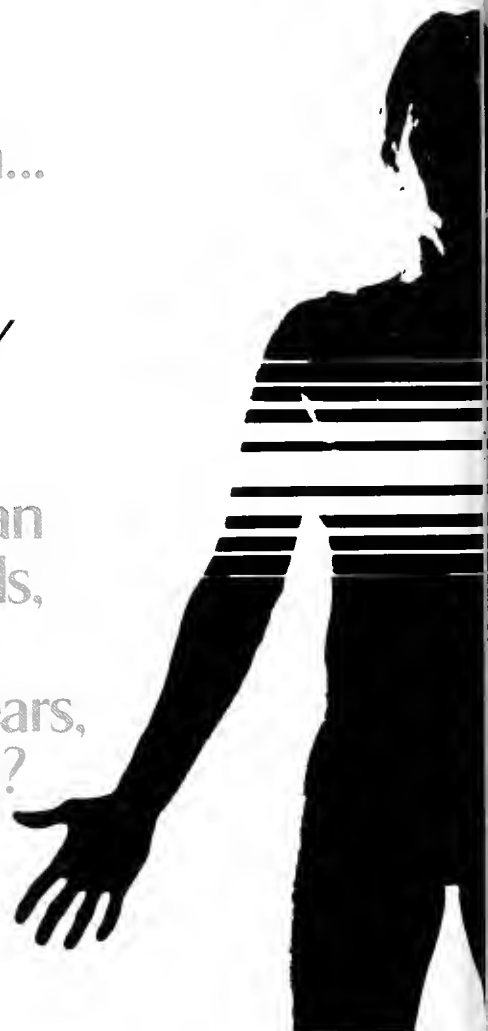
Vaz will supervise the new Brenner Center for Adolescent Medicine at the Medical Center. She holds the M.D.C.M. degree from McGill University in Montreal.

Those appointed as instructors are Dr. Gloria J. Colurso, physiology and pharmacology; Dr. Carolyn F. Pedley, medicine (general medicine/

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endocrinology); Richard E. Snow, allied health (physician assistant program); and Dr. Michael V. Ward, comparative medicine.

Roy Gallinger, a second-year medical student at Bowman Gray, has received a community service award from the CIBA Pharmaceutical Co.

The award, which consists of books from the CIBA collection of medical illustrations by Dr. Frank Netter, recognizes Gallinger's work last summer in a health project with migrant farm workers in Newton Grove, N.C.

Gallinger spent eight weeks as a member of a medical screening team at the Tri-County Clinic in Newton Grove. The team screened migrant workers for occupational illnesses and provided them with transportation for medical appointments.

The project was sponsored by the North Carolina Rural Health Coalition.

Bowman Gray research suggests that aggressive monkeys develop more coronary heart disease than submissive monkeys only if they live in stressful social situations that encourage competition.

In stable, non-threatening social environments, competitive and dominant monkeys have significantly less coronary disease than their subordinates.

The research was headed by Dr. Jay R. Kaplan, assistant professor of comparative medicine. He explains that the research is relevant to humans because the aggressive, competitive individual has been thought of as prone to coronary heart disease and heart attacks. But Kaplan's work suggests that that is most likely to be true in highly competitive environments.

And there's more proof on the way!

1982 will see the completion of the Multiple Risk Factor Intervention Trial (MRFIT)—a six-year, 12,000-patient study assessing the factors that increase risk of cardiovascular disease. For the management of hypertension, the preferred Step-2 regimen in this study is reserpine-thiazide.

In 1978, in a preliminary report presented to the Epidemiology Section of the American Heart Association (Dallas, Nov 1978), after 12 months of the trial, fewer patients (5.3%) treated with reserpine suffered depression than even the untreated control group (7.7%)!

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borrowers were delinquent in their payments, for a delinquency rate of 4.8%.

The UNC-CH medical school's loan collection rate was 15th best among the 32 medical schools nationwide that responded to a survey conducted by the federal Health Services Administration. The average delinquency rate was 15%. For the purposes of this survey, borrowers were considered delinquent if they were more than 30 days behind in their loan payments.

Clarence M. Stover Jr., associate dean for administration of the UNC-CH medical school, said the school's good loan collection rate can be attributed to several factors.

"The high quality of the operation of the university's student aid personnel ensure that this loan program is administered efficiently," Stover said. "We also believe that our good record in this area reflects the fact that we have a very high caliber of medical students who try to live up to their obligations."

A total of \$2.17 million has been borrowed by UNC-CH medical students under the federal loan program, and only \$22,005 of that amount — about one percent — was past due at the time of the school's last report on the program.

"These loans are exceedingly important to many of our students," said Dr. Stuart Bondurant, dean of the medical school. "So we take our responsibilities regarding this program very seriously and do our best to see that these loans are repaid rapidly."

"If this program were ever lost, many qualified students from disadvantaged and even middle-income

families would be unable to pursue careers in medicine," Bondurant added.

Of the 641 students currently enrolled in the UNC-CH School of Medicine, 59 have received federal loans.

Dr. Eugene S. Mayer recently completed giving the Area Health Education Center (AHEC) program a complete checkup, and the innovative program was found to be healthy and thriving.

Between February and July of this year, AHEC Director Mayer and various members of his staff traveled to all nine AHEC regions and visited 33 towns. The site visits included one day in the regional offices and a second day meeting with health professionals and officials in at least two small towns in the area.

The following AHEC program accomplishments were noted:

- A network of nine AHECs now is functioning in partnership with the four university medical centers in the state.

- Community-based continuing education is accessible to health practitioners and support personnel throughout the state.

- A network of libraries and learning resource centers now connects almost all community hospitals to an AHEC and, in turn, to a university health sciences library.

- New or renovated educational facilities have been completed in 33 sites across the state.

- Cooperative assistance has been provided to other statewide initiatives concerned with the education, training, and retention of health professionals and support personnel.

Rehabilitation specialists at the medical center in Chapel Hill and their counterparts in Mexico will visit each other and share information under a cooperative program being established by the University of North Carolina at Chapel Hill and Mexican health officials.

The program is an outgrowth of a recent visit to Chapel Hill by Dr. Alicia Castaneda, director of rehabilitation training for the Mexican government. She attended a seminar on "functional electrical stimulation" sponsored by the Department of Physical Therapy at North Carolina Memorial Hospital. The seminar taught physical and occupational therapists how to use electrical stimulation to re-educate and strengthen muscles in patients who have suffered nerve damage.

Physical therapist Mike Thomas, spokesman for the seminar organizing committee, said Castaneda's visit was quite productive. "I think we have made a good impression on each other, and she has collected a lot of information to take back with her."

"I think this is the beginning of a very mutually beneficial exchange," Thomas said.

For several years, North Carolina Memorial Hos-

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Each Tablet Contains:

Pseudoephedrine	25.0 mg
Pheniramine maleate	12.5 mg
Nicotinic acid	50.0 mg

Clinically proven actions

- Antihistaminic
- Cerebral stimulant
- Vasodilator

Few side effects

- Vasodilation occasionally causes facial flushing which can be minimized by recommending that Ru-Vert[®] be taken following meals or with food.

Dosage

- One or two tablets three times a day

Please see next page for a summary of prescribing information

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In Vertigo On Balance... RU-VERT[®]

See following prescribing information.

DESCRIPTION: Each tablet contains the following active ingredients:

Pentylenetetrazol 12.5 mg
Pheniramine maleate 8 mg
Nicotinic acid 50 mg

INDICATIONS: Ru-Vert is indicated as an adjunct therapy in the symptomatic treatment of acute or chronic vertigo.

CONTRAINDICATIONS: Convulsive disorders or known history of sensitivity to any of the listed active ingredients. Because of the vasodilating action of nicotinic acid, Ru-Vert should not be used in patients with hypotension.

WARNINGS: The safety of this preparation during pregnancy and lactation has not been established. Use of this drug requires that the physician evaluate the potential benefits of the drug against any possible hazard to the mother and child.

PRECAUTIONS: Although there are no absolute contraindications to pentylenetetrazol, it should be used with caution in epileptic patients or in the known to have a low convulsive threshold or a focal brain lesion. Caution should be exercised when treating patients with high blood pressure. Ru-Vert may have heart disease. While pentylenetetrazol does not act directly on the myocardium, the results from central vagal stimulation could cause bradycardia.

Pheniramine maleate, like other antihistamines, may produce sedative side effects in certain patients.

Transient vasodilation due to rapid absorption of nicotinic acid may produce facial flushing and a sensation of warmth. These effects may be ameliorated by recommending that Ru-Vert be taken following meals or with food.

ADVERSE REACTIONS: Pentylenetetrazol in high doses may, in addition to symptoms typical of central nervous system stimulants, which act on the higher motor centers and the spinal cord. Convulsions resulting from this drug are spontaneous and are not influenced by external stimuli. They usually last for several minutes and are followed by or followed by a period of respiratory paralysis. Death has been reported from the ingestion of 10 grams of pentylenetetrazol.

DRUG ABUSE: Drug dependence has not been reported with Ru-Vert.

OVERDOSAGE: Signs and symptoms of acute overdosage may be due primarily to an overstimulation of the central nervous system and to an excessive vasodilation with resulting autonomic nervous system imbalance. The symptoms may include the following: vomiting, agitation, tremors, hyperreflexia, sweating, profuse diaphoresis, hypotension, hyperventilation, tachycardia. Treatment consists of supportive measures. If signs and symptoms are not too severe and the patient is conscious, gastric evacuation may be accomplished by induction of vomiting or gastric lavage.

Intensive care must be provided to maintain adequate circulation and respiration when necessary.

USAGE AND ADMINISTRATION: The recommended dosage of Ru-Vert for vertigo or motion sickness is 1 to 2 tablets three times a day with meals or light snacks.

This drug is not for use in children under 12 years of age.

HOW SUPPLIED:
Bottles of 100 tablets
Bottles of 300 tablets
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NDC 0524-0060-33
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pital has been providing medical support for Orange County's emergency services on an informal basis.

This summer that relationship was made official. The hospital signed an agreement with the county commissioners to provide free training and medical supervision for both the Orange County and South Orange rescue squads.

Dr. Thomas Griggs is director of the hospital's Emergency Medical Technician training program.

He explained that, under the agreement with the county, hospital personnel train rescue squad members above the basic EMT level.

"We are responsible for training those who are permitted to start IV solutions in the field, on orders from a physician at the hospital. We also train paramedics, who are certified to start IVs, administer medications and do cardiac defibrillation on heart attack victims, also under close medical supervision."

The hospital has designated a nurse, Lucy Fort, to be fulltime coordinator of the EMT training program.

Helping families cope with the normal changes that occur during a divorce is the focus of a study at the Department of Psychiatry.

"We want to educate people about what they can expect during a divorce, about the feelings they may have and how their children may feel," said Dr. Nancy Warren, assistant professor of psychology and project director.

"Divorce occurs so frequently now that by 1990, 30% to 40% of all children will have had some experience in a single parent home," said Dr. Robert Grew, project co-director. "Divorce isn't a single event. It's a full process of change for a family — a change that is largely predictable."

This normal, predictable process is what Warren, Grew and associates in the School of Medicine are studying. They hope to find out what type of educational support program works best while providing a needed service for single parents.

The program focuses on an "off-the-wall period of adjustment, which usually is quite lengthy, usually two or three years," Grew said.

The continuing study, now in its second year, is a cooperative effort between the UNC-CH Department of Psychiatry and the Orange-Person-Chatham Mental Health Center. It is being funded for three years by the National Institute of Mental Health.

Dr. Raymond P. White, associate chief of staff and associate dean of the medical school, received the Distinguished Service Award of the Dental Foundation of North Carolina Dec. 4.

Former dean of the School of Dentistry, White was given the award for his service as ex-officio member of the foundation's board of directors and executive committee.

Larry R. Churchill has been promoted to associate

professor of social and administrative medicine effective Jan. 1.

The appointments of two faculty members to the School of Medicine's Department of Surgery have been announced by Chancellor Christopher C. Fordham III.

Drs. Alfred R. Hansen and Blair A. Keagy were both appointed assistant professors of surgery effective Dec. 1.

Hansen has been a visiting assistant professor here since June, and he has been at N.C. Memorial Hospital since 1977, most recently as acting director of emergency room and outpatient surgical services. Previously he held faculty or research appointments at the University of Minnesota, Riker Research Laboratories and the University of Iowa.

A Montana native, he earned his B.S. in 1965 from Michigan Technological University and his M.S. in 1968, Ph.D. in 1970 and M.D. in 1977 from the University of Iowa.

Keagy returns to Chapel Hill after having held several positions here from 1970-78. He interned and held residencies at N.C. Memorial Hospital and was a fellow and part-time instructor in the School of Medicine during that time.

From 1978-81 he was an associate in cardiovascular and thoracic surgery at Geisinger Medical Center in Danville, Pa.

A Pennsylvania native, he earned his B.A. in 1966 from Duke University and his M.D. in 1970 from the University of Pittsburgh.

Dr. John J. Lemasters, an associate professor of anatomy at the University of North Carolina at Chapel Hill, has received an established investigatorship award of the American Heart Association.

Lemasters' primary field of study is bioenergetics, which deals with the transformation of energy within living organisms. Not only has his research increased the scientific understanding of cell and molecular biology, but also laboratory techniques he has developed have been adopted by other medical scientists.

A 1969 graduate of Yale University, Lemasters earned M.D. and Ph.D. degrees from Johns Hopkins University in 1975. He was appointed to the UNC-CH School of Medicine faculty in 1977 as an assistant professor. Lemasters, who also serves as director of graduate studies in the Department of Anatomy, was promoted to associate professor this year.

The American Heart Association established investigatorship is a five-year award, covering the period July 1, 1982-June 30, 1987.

Dr. Rita Valentino, a postdoctoral research associate in pharmacology, has won an American College of Neuropsychopharmacology-Mead Johnson

Travel Award. The \$1,000 award covered Valentino's travel and expenses associated with the annual meeting of the American College of Neuropsychopharmacology. The meeting was held Dec. 14-18 in San Diego, Calif.

Valentino, who is from Scotch Plains, N.J., is one of 10 recipients of the award. She is working with Dr. Raymond Dingledine, assistant professor of pharmacology, on the effects opiates have on the brain.

Valentino received a B.S. degree in pharmacy from the University of Rhode Island in 1975 and a Ph.D. in pharmacology from the University of Michigan in 1980. She is working at UNC-CH on a National Institute of Drug Abuse Postdoctoral Fellowship Award.

The Department of Family Medicine at the University of North Carolina at Chapel Hill School of Medicine has been awarded a grant to report on how the inpatient care experiences of family medicine residents through the country are documented.

The \$5,583 grant, awarded by the Family Health Foundation of America, will be used to develop a detailed report on the various ways family medicine programs in the United States document the diagnoses and procedures their residents perform while treating inpatients.

"The monograph developed through this grant will be a resource document for family medicine programs throughout the country," said Jacqueline Resnick, a social research assistant and co-author of the project. "Documenting inpatient experiences will help residents obtain hospital privileges and will be important to improving curricula for family medicine programs."

The grant was awarded as the result of a national survey conducted in May by the Department of Family Medicine on behalf of the North Carolina Academy of Family Practice. Under the grant, Dr. Peter Curtis, associate professor of family medicine and director of research, and Resnick will be conducting two follow-up surveys and reporting the results of all three surveys to other family medicine programs.

Included in the monograph will be a commentary on hospital privileges for family practitioners by Dr. Samuel W. Warburton, chief of the division of family medicine and director of the Duke-Watts family medicine program.

R. Hal Shigley, clinical director of the T.E.A.C.C.H. division, presented a paper at the Texas Research Institute of Mental Sciences regional symposium on individualized program planning for autistic citizens Aug. 17-18 in Dallas.

Charles R. Hackenbrock, professor and chairman of the Anatomy Department, spoke at a symposium on membrane dynamics at the VII International Biophysics Congress and III Pan-American Biochemistry Congress Aug. 23-28 in Mexico City.

James W. Lea, director of the Program for International Training in Health, and Dr. Eugene S. Mayer, director of Area Health Education Centers, worked with officials in completing the development and planning of a INTRAH/Government of Turkey program that will design and validate an inservice training system. They met with officials Aug. 28-Sept. 6 in Ankara, Turkey.

Dr. John L. Lemasters, assistant professor of anatomy and cell biology, was a guest speaker at the Gordon Research Conference on Energy Coupling Mechanisms Aug. 17-21 in Hoderness, N.H. Lemasters also gave a seminar at the Pennsylvania State University College of Medicine Aug. 31 in Hershey.

Michael Topal, assistant professor of pathology and a member of the Cancer Research Center, presented a paper at the second European Molecular Biology Organization Meeting on Accuracy in Biological Processes Sept. 3 in Paris.

Dr. Walter E. Stumpf, professor of anatomy and pharmacology, gave lectures and conducted seminars recently at the University of Ulm, West Germany. Stumpf also gave a seminar in Tubingen.

Dr. David G. Kaufman, professor of pathology, biochemistry and nutrition and a member of the Cancer Research Center, participated in a site visit at Boston University School of Medicine Sept. 18.

Eng-Shang Huang, associate professor of medicine, bacteriology and immunology and a member of the Cancer Research Center, participated in a Kaposi Sarcoma Workshop sponsored by the Division of Cancer Treatment and the Division of Cancer Cause and Prevention at the National Cancer Institute and the Center for Disease Control Sept. 15 in Bethesda, Md.

Dr. Joseph S. Pagano, professor of medicine, bacteriology and immunology and director of the Cancer Research Center, presented a talk on Acyclovir Mechanism on Epstein-Barr Replication at the International Acyclovir Symposium Sept. 9 in Washington, D.C.

Three members of the Cancer Research Center who presented posters at the International Acyclovir Symposium in Washington, D.C. on Sept. 9 were: James Shaw, research assistant professor of bacteriology and immunology, Herpes Simplex Virus Resistance to

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Potassium Guaiacolsulfonate	100mg.

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DOSAGE: Adults - One teaspoonfull every 3 to 4 hours. Children over 6 years - 1/2 Adult dose. Not recommended for children under 6 without very close supervision by physician.

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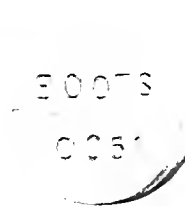
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*Reference: 1981-82 American Druggist Blue Book

1982

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SU-TON[®]

Liquid Tonic

A Tonic for Geriatric Patients

A pleasant tasting tonic containing iron, vitamins, minerals, and an analeptic. Ideal for those who may benefit from vitamin deficiency prevention. Just one tablespoon before each meal.

DESCRIPTION Forty-five milliliters of SU-TON contains the following ingredients: Pentylenetetrazol, 30 mg • Niacin, 50 mg • Vitamin B-1, 10 mg • Vitamin B-2, 5 mg • Vitamin B-6, 1 mg • Vitamin B-12, 3 mcg • Manganese (as Manganese Sulfate), 1 mg • Magnesium (as Magnesium Sulfate), 2 mg • Zinc (as Zinc Sulfate), 1 mg • Iron (as Ferric Pyrophosphate Soluble), 22 mg • Alcohol, 18%

INDICATIONS AND USAGE SU-TON contains pentylenetetrazol which may be helpful in the older patient as an analeptic agent when mental confusion and memory defects are present. SU-TON also contains vitamins, trace minerals, and iron, for those patients who may benefit by preventing the development of a deficiency.

CONTRAINDICATIONS Epilepsy, convulsive disorders or known history of sensitivity to any of the listed active ingredients.

WARNINGS The safety of this preparation during pregnancy and lactation has not been established. Use of this drug requires that the physician evaluate the potential benefits of the drug against any possible hazard to the mother and child.

PRECAUTIONS Although there are no absolute contraindications to pentylenetetrazol, it should be used with caution in epileptic patients or those known to have a low convulsive threshold or a focal brain lesion. Caution should be exercised when treating patients with high doses of SU-TON who have heart disease. While pentylenetetrazol does not act directly on the myocardium, the results from central vagal stimulation could cause bradycardia.

ADVERSE REACTIONS Pentylenetetrazol in high doses may produce toxic symptoms typical of central nervous system stimulants which act on the higher motor centers and the spinal cord. Convulsions resulting from this drug are spontaneous and are not induced by external stimuli. Usually last for several minutes and are followed by profound depression and respiratory paralysis. Death has been reported from the ingestion of 10 grams of pentylenetetrazol.

DRUG ABUSE Drug dependence has not been reported with SU-TON.

OVERDOSSAGE Signs and symptoms of acute overdose may be due principally from overstimulation of the central nervous system and from excessive vasodilatation with resulting autonomic nervous system imbalance. The symptoms may include the following: vomiting, agitation, tremors, reflexia, sweating, confusion, hallucinations, headache, hyperpyrexia, tachycardia. Treatment consists of appropriate supportive measures. If signs and symptoms are not too severe and the patient is conscious, gastric evacuation may be accomplished by induction of emesis or lavage. Intensive care must be provided to maintain adequate circulation and respiratory excitation.

DOSEAGE AND ADMINISTRATION One tablespoonful (15 ml) 3 times a day 20-30 minutes before meals. This drug is not for use in children under 12 years of age.

HOW SUPPLIED Bottles of 473 ml (16 fl. oz.)

Federal law prohibits dispensing without prescription.

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Acyclovir in Persistently Infected Lymphoblastoid Cell Lines; Brenda Colby, postdoctoral fellow, Replication of Epstein-Barr Virus DNA in Human B-Lymphoblastic Cells Treated for Extended Periods with Acyclovir; and Eng-Chun Mar, research associate, The Effect of Acyclovir on Protein and DNA Synthesis in Human Cytomegalovirus-Infected Cells.

Dr. Arthur J. Prange, professor of psychiatry, has been elected for a three-year term to the Council of the American College of Neuropsychopharmacology.

Dr. W. Ray Gammon, assistant professor of dermatology, was a lecturer at the "Westwood Pre-Board Examination" Sept. 10-13 in Chicago.

Dr. Charles H. Hendricks, professor of obstetrics and gynecology, became a fellow ad eundem of the Royal College of Obstetricians and Gynecologists June 3 in London. He was the dedication speaker for the Theobald Seminar Room at University College Hospital June 2. He also gave lectures at University College Hospital, University of Bristol, and University of Newcastle Upon Tyne.

Dr. Edward V. Stabb, professor and associate chairman of radiology, and Dr. Ali Shirkhoda, assistant professor of radiology, displayed an exhibit entitled "Pitfalls in Computed Tomography of the Abdomen and Pelvis" at the 67th annual meeting of the Radiological Society of North America Nov. 14-20 in Chicago. Shirkhoda also presented a paper co-authored by Dr. Paul Biggers, professor of surgery, entitled "Computed Tomography in Choanal Atresia."

Dr. Gustavo S. Montana, professor of surgery, presented a paper entitled "Carcinoma of the Cervix Stage IB, Analysis of Treatment Failures and Complications," at the 67th annual meeting of the Radiological Society of North America Nov. 14-20 in Chicago. The paper was co-authored by Dr. W. C. Fowler, associate professor of obstetrics and gynecology; Dr. M. A. Varia; Dr. L. A. Walton, associate professor of obstetrics and gynecology; Dr. M. Kirsch; and Dr. McCafferty, assistant professor of radiology. Montana also displayed an exhibit entitled "The Oncology Case of the Day" co-prepared by Dr. Kirsch; Dr. J. Roseman; J. Halle; and Dr. M. A. Varia.

Dr. Carol A. Mittelstaedt, assistant professor of

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ACTIVE MEDICAL STAFF — December, 1981

Rolfe B. Finn, M.D.
William D. Keck, M.D.
Morgan E. Scott, M.D.
Don L. Weston, M.D.
Davis G. Garrett, M.D.
D. Wilfred Abse, M.D.
Hal G. Gillespie, M.D.
Basil E. Roebuck, M.D.
Orren LeRoyce Royal, M.D.



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radiology, was a moderator of an ultrasound works in progress session at the 67th annual meeting of the Radiological Society of North America Nov. 14-20 in Chicago.

Dr. J. Randolph Perry, assistant professor of radiology, presented a paper entitled "Performance Characteristics of a Digital Gamma Camera" at the 67th annual meeting of the Radiological Society of North America Nov. 14-20 in Chicago.

Dr. W. Bonner Guilford, assistant professor of radiology, presented an exhibit and paper entitled "Vascular Fracture: New Meaning for Monckeberg's Medial Sclerosis" at the 67th annual meeting of the Radiological Society of North America Nov. 14-20 in Chicago. The presentation was co-authored by Dr. L. Kwock, assistant professor of radiology; Dr. R. L. Reddick, assistant professor of pathology; Dr. W. D. Mattern, associate professor of medicine; Dr. R. J. Falk; and Dr. L. V. Pacilio.

B. G. Thompson, chief radiological engineer, presented a physics works in progress paper entitled "Performance Evaluation of an Ionization Chamber Phototimer for Portable X-Ray Machines" at the 67th annual meeting of the Radiological Society of North America Nov. 14-20 in Chicago.

Dr. Gordon F. Murray, professor of cardiothoracic surgery, has been named associate chief of the division, effective immediately. The appointment was announced by Benson R. Wilcox, M.D., Chief, Division of Cardiothoracic Surgery.

East Carolina University School of Medicine

A Charlotte-based architectural firm has been selected to design the School of Medicine's new radiation therapy center, a \$5.3 million project that received final approval from the UNC Board of Governors in November.

The building committee for the ECU board of trustees and medical school representatives selected J. N. Pease Associates as the architect after examining proposed designs for the 12,000-square-foot building.

The facility will be a comprehensive radiation therapy center for Eastern North Carolina and will support existing therapy units in New Bern, Kinston and Goldsboro. The center's staff will work closely with the New Bern unit which offers regional service.

"The radiation therapy center will occupy a very prominent place in our cancer program," said Dr. William E. Laupus, medical school dean. "Its success will contribute to improved and comprehensive care for cancer patients in our region."

The ECU facility will house two medical linear accelerators, a 4-million-volt unit and an 18-million-volt unit, said Laupus. The unit will also include a radiation therapy simulator that provides the high quality radiographic images necessary for planning radiation treatment and determining the appropriate doses. About 40% of the budget will be used for equipment.

The center will be located at the university's health science campus adjacent to the Brody Medical Science Building and Pitt County Memorial Hospital. Construction, scheduled to begin in late 1982, will take 18 to 24 months to complete. Laupus said the medical school expects to open the center in 1984.

Three students received awards this fall at the School of Medicine's annual awards ceremony. Mario Turi, Greenville, Class of 1984, received the Huffman Award for demonstrating the highest level of academic achievement and personal stature in his class. John Dew, Raleigh, Class of 1983, received the Vivian Neal Barnes Memorial Award for achievement in pharmacology. Lee Pippin, Kinston, Class of 1983, received the CIBA Award for outstanding community service.

More than 100 infants and toddlers attended the second annual neonatal intensive care unit graduate party on December 6. Nearly 1,100 critically ill babies have been patients in the NICU since it opened in 1978.

The unit, located at Pitt County Memorial Hospital, is operated by the Department of Pediatrics and supported with funds from the statewide perinatal program.

Dr. Sudhakar Madakasira, assistant professor of psychiatric medicine, has published an article entitled "Capgras Syndrome in a Patient with Myxedema." The article appears in the November issue of the *American Journal of Psychiatry*.

Dr. Thomas F. O'Brien, professor of medicine, recently was named president-elect of the Pitt County Medical Society. O'Brien also has been appointed chairman of the Audit Committee of the N.C. Medical Society.

Dr. James G. Jones, professor and chairman of the Department of Family Medicine, authored a chapter appearing in the book *Principles of Family Practice* published by Springer Verlag, N.Y. The chapter is entitled "Patient Management Skills."

Jones also has been appointed to serve on the American Academy of Family Physicians' Committee on Aging.

Dr. Loretta Kopelman, associate professor of pediatrics and humanities, has been selected to serve a three-year term on the Committee of Philosophy and Medicine of the American Philosophical Association.

Dr. Phillip H. Pekala, assistant professor of biochemistry, recently was invited to lecture at Rockefeller University by Dr. Anathony Cerami, director of Rockefeller's Laboratory of Medical Biochemistry. Pekala presented "Growth and Differentiation of 3T3-L1 Preadipocytes." He also established conditions for growth of the 3T3-L1 cells in the Rockefeller laboratory.

Pekala also traveled to Anaheim for the 21st annual meeting of the American Society for Cell Biology. At the meeting, he presented a paper entitled "Independent Effects of Differentiating Conditions and Time in Culture on Hormone Responsiveness and Guanine Nucleotide Regulatory Proteins of 3T3-L1 Preadipocytes and 3T3-C2 Fibroblasts."

Pekala was selected as chairman for the society's session on "Hormones and Receptors 1: Protein Phosphorylation and Hormonal Regulation."

Three faculty members presented a paper at the regional meeting of the American Society for Microbiology held in Williamsburg December 4-6.

Dr. Robert S. Fulghum, associate professor of microbiology, Dr. Jack E. Brinn Jr., associate professor of anatomy, and John M. Worthington, research technician, presented "Induced Otitis Media in Chinchillas and Gerbils Using *Streptococcus pneumoniae*, *Haemophilus influenzae* and a Polymicrobial Culture with Anaerobic Bacteria" during the meeting.

Several School of Medicine faculty have received research grants recently.

Dr. Alvin Volkman, professor of pathology and laboratory medicine, has received \$74,650 to study "Mechanisms of Macrophage Diversity" from the National Institutes of Health.

Dr. Judith M. Thomas, associate professor of surgical research, was granted \$87,157 from the Department of Health and Human Services to study "Action of Rabbit Anti-human Thymocyte Globulin."

The Department of Health and Human Services also granted \$60,490 to Dr. S. Jamal Mustafa, as-

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sociate professor of pharmacology, for the study of "Mechanisms of Coronary Flow Regulation by Adenosine."

Dr. Ronald W. Dudek, assistant professor of anatomy, was awarded \$31,751 by the Juvenile Diabetes Foundation. Dudek's research examines the "Ultrastructural Study on Maturation of Insulin Secretion."

AMERICAN COLLEGE OF PHYSICIANS

Eight North Carolinians have been chosen Fellows of the American College of Physicians. They are Drs. Myron S. Cohen, Romulo E. Colindres and David S. Sheps of Chapel Hill, Drs. Jack D. McCue and David R. Patterson of Greensboro, Dr. William F. Bobzien III of Rocky Mount, Dr. John A. Boice of Wilmington, and Dr. James A. Whitaker III of Wilson.

The removal of the inflammation is as indissolubly connected with venesection as its cause, as the extinction of the spark when it falls upon snow, or with an explosion when it falls upon gunpowder with these substances respectively, and its operation is with equal difficulty explained: for the mind, in contemplating the abstraction of blood from the vessels, sees nothing more than the simple phenomenon and its effects, the debility and the removal of the disease, its consequent. Why the abstraction of the blood, should produce a diminished action of the heart, is equally inexplicable with the power of snow to extinguish the spark, or of gunpowder to produce an explosion, on the contact of that body. Reasoning from analogy, we should expect that the diminution of the quantity of blood in the vascular system, would lessen the mass to be propelled, and enable the heart to act with more vigour; but the contrary is the case; debility takes place long before a sufficient quantity is abstracted to lessen the mass of the blood, so as to aid its propulsion by diminishing its volume and weight. The phenomenon is purely vital; we see that it is followed by its effect, the removal of the disease, and this is all we know upon the subject. This naked manner of contemplating the operation of the causes, which affect the human body, produces great certainty, as it is continually the subject of observation, and experience will rectify its errors. A cause, then, is merely a phenomenon, which is invariably antecedent and connected with another, as its consequent; and this connection is expressed by the word power, which is given to the antecedent phenomenon, from its invariable order of occurrence. — *Elements of the Theory and Practice of Physic*, by George Gregory, M.D., with notes and additions, adapted to the Practice of the United States, by Nathaniel Potter, M.D., and S. Colhoun, M.D., Vol. I, Philadelphia, Towar & Hogan, 1829.

In Memoriam

DAVID EARL SMITH

David Earl Smith was born on January 26, 1938, in Bluefield, West Virginia. He received his Bachelor of Science and medical degrees at West Virginia University and completed an internship at Lankenau Hospital in Philadelphia. After two years of active duty in the U.S. Navy, he went to New York City to pursue residency training in ophthalmology at the New York Eye and Ear Infirmary. In 1969 he joined the Charlotte Eye, Ear and Throat Associates, where he was serving as President of the Medical Staff of the Charlotte Eye, Ear, and Throat Hospital at the time of his death, July 18, 1981.

He died in a drowning accident in a rain swollen mountain river near Cherokee while vacationing with his family. He is survived by his wife, Carolyn, and sons, Danny, Timmy and Steve.

Dave was a special friend to many people. He was a dedicated Christian of deep convictions who, with the love and support of his wife and his boys, tried to live each day of his life as a witness to his belief in the Lord. He had an abiding faith in the basic goodness of people.

Dave had an intuitive sense of human needs of his patients, took the time to listen to his patients, and tried to minister to their emotional and spiritual needs in the best way that he could. He was an effective listener and counselor.

Dave's Christian activity centered chiefly around Calvary Church, a very active evangelical church with a strong missionary program. He was Clerk of Session, the most highly respected position for an elder and one which calls for extraordinary communications skills, sound judgment and sensitivity. In addition, he spent several years as Chairman of the Missions and Evangelism Committee and served on the Finance and Christian Education Committees as well. He served on the home board of Wycliffe Bible Translators and was intimately associated with their support group in Waxhaw, the Jungle Aviation and Radio Service.

As President of the Charlotte Eye, Ear, and Throat Hospital Medical Staff, Dave was an effective leader. As a skilled ophthalmologist and eye surgeon, he strove to remain current in new techniques.

Dave managed to live each day to the fullest and put a tremendous amount of productive activity into his allotted forty-three years. Although Dave was understandably proud of his professional attainments, he would be most pleased to be remembered for his efforts on behalf of Christian evangelism.

Julian C. Culton, M.D.

Mecklenburg County Medical Society

TIFFANY NOLAN BARNES, M.D.

Dr. Tiffany Nolan Barnes died October 20, 1981. He was born October 10, 1930, in Asheboro, the son of Dr. Tiffany Barnes and Doris Nolan. He attended Wake Forest University where he received his B.S. degree in 1952. In 1957 he completed his medical training at the Medical College of Virginia. He completed his internship at DePaul Hospital, Norfolk, and his residency at Petersburg, Va., Sanatorium in 1959.

Dr. Barnes served on active duty with the U.S. Navy from 1959 to 1961. From active duty he returned to Asheboro to pursue his family practice. During this time he was a member of the medical staff of the Randolph Hospital, the North Carolina Medical Society, the American Medical Association and the American Academy of Family Practice.

Dr. Barnes exhibited a love and concern for his patients and was dedicated to his profession and the cause of good medical care.

He and his wife, the former Dorothy Bennett, had three children, Tiffany, Doris Lake and Angela.

RANDOLPH COUNTY MEDICAL SOCIETY

THORNTON RITENOUR CLEEK, M.D.

Dr. Thornton Ritenour Cleek died September 20, 1981. He was born June 24, 1919, in Warm Springs, Va., to George Washington Cleek and Seraphine Ritenour. He attended Washington and Lee University where he received his B.A. In 1950 he completed medical training at the Medical College of Virginia, and completed his internship and residency at Brooks General Hospital, Fort Sam Houston, Texas. After his residency he served two years in the Army Medical Corps and retired from the Army Reserve as a captain.

Thornton served organized medicine in numerous capacities. He was a member of the staff of Randolph Hospital, the Randolph County Medical Society, the North Carolina Medical Society, the North Carolina Academy of Family Practice, the American Academy of Family Practice and the American Medical Association. He served the North Carolina Medical Society as Counselor for the Eighth District from 1971 to 1973. He was a member of the Peer Review Commission and director of the Peer Review Foundation, the Medical-Legal Commission and the Headquarters Commission of the medical society. He was also a member of the Commission of Health Services of the North Carolina Division of Human Resources. In the North Carolina Academy of Family Practice he served as a director from 1961 to 1963, as vice-president in 1965, secretary-treasurer 1966 to 1969, and president in 1971. In the American Academy of Family Practice he

served on the Finance Committee as an alternate delegate from North Carolina 1977-1981, and a Charter Fellow of the American Board of Family Practice.

In his community he was a member of the First Presbyterian Church and served as deacon. He was active in scouting and was a member of the board of trustees of the Medical Alumni Association of the Medical College of Virginia and a member of the Sons of the American Revolution.

Thornton exhibited not only a love for his profession but a sense of responsibility and dedication to his patients. He was kind, thoughtful and understanding and made himself available always as a primary care physician. His friends and colleagues will long remember him as being sincere and dedicated to the principles of accuracy and understanding.

RANDOLPH COUNTY MEDICAL SOCIETY

In Paris, there has arisen a new fancy, which fixes this imaginary being, intervening between the primary cause and the disease, in the intestines and stomach. Instead of the spasm of Cullen seated in the skin, and the excitability of Brown dispersed over the whole system, Broussais imagines the disease to consist of an inflamed state of the intestinal canal. As few persons die in the first attack of fever, it is difficult to prove the existence of this inflamed state of the lining membrane of this passage; and besides, appearances of inflammation occur without any other cause than the simple powers of the arteries, and therefore any proof drawn from this source must be equivocal. Yelloly found that persons who had died from hanging, exhibited the mucous membrane of the intestines in a high state of apparent inflammation. Dr. Seeds and Dr. Parrish, state that animals bled to death, exhibited the same appearances. As it has been found, too, in cases of death from other causes, it is certain that when discovered after fever, particularly a long time after the first cause has ceased to operate, it cannot be considered in any other light, than as an hypothesis. Dr. W. Phillips proved that the lungs and the stomach, were covered with injected vessels, in animals who died from dividing the par vagum. Mr. Brodie has shown, that arsenic applied to wounds, kills animals, and the stomach is found apparently inflamed, though no poison has been applied to it. These facts then show, that an inflamed state of the capillaries occurs from other causes, and in other situations; and that it can by no means be regarded as the result of the operation of miasmata, though it is found among the morbid phenomena, which are discovered after death. It might with more propriety be considered as a result, than as a cause of that class of diseases; though even this is problematical, since it is discovered in subjects who have died suddenly from a state of the most perfect health. It is therefore only a concomitant of these affections, and must, when regarded as their cause, be considered as entirely hypothetical. — *Elements of the Theory and Practice of Physic*, by George Gregory, M.D., with notes and additions, adapted to the practice of the United States, by Nathaniel Potter, M.D., and S. Colhoun, M.D., Vol. I, Philadelphia, Towar & Hogan, 1829.

Classified Ads

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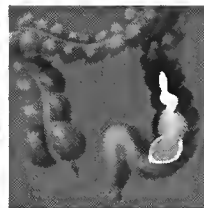
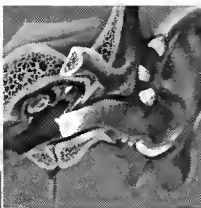
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BactrimTM (trimethoprim and sulfamethoxazole) succeeds

Bactrim is useful for the following infections when due to susceptible strains of indicated organisms (see indications section in summary of product information):

Expanding its usefulness in antimicrobial therapy



in recurrent UTI...
a continuing record of high clinical effectiveness against common uropathogens

in acute otitis media in children...
effective against both major otic pathogens...with b.i.d. convenience

in acute exacerbations of chronic bronchitis in adults...
clears the sputum and lowers its volume...on b.i.d. dosage

in shigellosis...
faster relief of diarrhea than with ampicillin²

Before prescribing, please consult complete product information, a summary of which follows:

Indications and Usage: For the treatment of urinary tract infections due to susceptible strains of the following organisms: *Escherichia coli*, *Klebsiella-Enterobacter*, *Proteus mirabilis*, *Proteus vulgaris*, *Proteus morganii*. It is recommended that initial episodes of uncomplicated urinary tract infections be treated with a single effective antibacterial agent rather than the combination. Note: The increasing frequency of resistant organisms limits the usefulness of all antibacterials, especially in these urinary tract infections.

For acute otitis media in children due to susceptible strains of *Haemophilus influenzae* or *Streptococcus pneumoniae* when in physician's judgment it offers an advantage over other antimicrobials. Limited clinical information presently available on effectiveness of treatment of otitis media with Bactrim when infection is due to ampicillin-resistant *Haemophilus influenzae*. To date, there are limited data on the safety of repeated use of Bactrim in children under two years of age. Bactrim is not indicated for prophylactic or prolonged administration in otitis media at any age.

For acute exacerbations of chronic bronchitis in adults due to susceptible strains of *Haemophilus influenzae* or *Streptococcus pneumoniae* when in physician's judgment it offers an advantage over a single antimicrobial agent.

For enteritis due to susceptible strains of *Shigella flexneri* and *Shigella sonnei* when antibacterial therapy is indicated.

Also for the treatment of documented *Pneumocystis carinii* pneumonitis. To date, this drug has been tested only in patients 9 months to 16 years of age who were immunosuppressed by cancer therapy.

Contraindications: Hypersensitivity to trimethoprim or sulfonamides; patients with documented megaloblastic anemia due to folate deficiency; pregnancy at term; nursing mothers because sulfonamides are excreted in human milk and may cause kernicterus, infants less than 2 months of age.

Warnings: BACTRIM SHOULD NOT BE USED TO TREAT STREPTOCOCCAL PHARYNGITIS. Clinical studies show that patients with group A β -hemolytic streptococcal tonsillopharyngitis have higher incidence of bacteriologic failure when treated with Bactrim than do those treated with penicillin. Deaths from hypersensitivity reactions, agranulocytosis, aplastic anemia and other blood dyscrasias have been associated with sulfonamides. Experience with trimethoprim is much more limited but occasional interference with hematopoiesis has been reported as well as an increased incidence of thrombopenia with purpura in elderly patients on certain diuretics, primarily thiazides. Sore throat, fever, pallor, purpura or jaundice may be early signs of serious blood disorders. Frequent CBC's are recommended; therapy should be discontinued if a significantly reduced count of any formed blood element is noted.

Precautions: General: Use cautiously in patients with impaired renal or hepatic function, possible folate deficiency, severe allergy or bronchial asthma. In patients with glucose-6-phosphate dehydrogenase deficiency, hemolysis, frequently dose-related, may occur. During therapy, maintain adequate fluid intake and perform frequent urinalyses, with careful microscopic examination, and renal function tests, particularly where there is impaired renal function. Bactrim may prolong prothrombin time in those receiving warfarin; reassess coagulation time when administering Bactrim to these patients.

Pregnancy: Teratogenic Effects: Pregnancy Category C. Because trimethoprim and sulfamethoxazole may interfere with folate metabolism, use during pregnancy only if potential benefits justify the potential risk to the fetus.

Adverse Reactions: All major reactions to sulfonamides and trimethoprim are included, even if not reported with Bactrim. Blood dyscrasias: Agranulocytosis, aplastic anemia, megaloblastic anemia, thrombopenia, leukopenia, hemolytic anemia, purpura, hypoprothrombinemia and methemoglobinemia. Allergic reactions: Erythema

multiforme, Stevens-Johnson syndrome, generalized skin eruptions, epidermal necrolysis, urticaria, serum sickness, pruritus, exfoliative dermatitis, anaphylactoid reactions, periorbital edema, conjunctival and scleral injection, photosensitization, arthralgia and allergic myocarditis. Gastrointestinal reactions: Glossitis, stomatitis, nausea, emesis, abdominal pains, hepatitis, diarrhea and pancreatitis. CNS reactions: Headache, peripheral neuritis, mental depression, convulsions, ataxia, hallucinations, tinnitus, vertigo, insomnia, apathy, fatigue, muscle weakness and nervousness. Miscellaneous reactions: Drug fever, chills, toxic nephrosis with oliguria and anuria, periarteritis nodosa and L.E. phenomenon. Due to certain chemical similarities to some goitrogens, diuretics (acetazolamide, thiazides) and oral hypoglycemic agents, sulfonamides have caused rare instances of goiter production, diuresis and hypoglycemia in patients; cross-sensitivity with these agents may exist. In rats, long-term therapy with sulfonamides has produced thyroid malignancies.

Dosage: Not recommended for infants less than two months of age.

URINARY TRACT INFECTIONS AND SHIGELLOSIS IN ADULTS AND CHILDREN, AND ACUTE OTITIS MEDIA IN CHILDREN:

Adults. Usual adult dosage for urinary tract infections—1 DS tablet (double strength), 2 tablets (single strength) or 4 teasp. (20 ml) b.i.d. for 10-14 days. Use identical daily dosage for 5 days for shigellosis.

Children. Recommended dosage for children with urinary tract infections or acute otitis media—8 mg/kg trimethoprim and 40 mg/kg sulfamethoxazole per 24 hours, in two divided doses for 10 days. Use identical daily dosage for 5 days for shigellosis.

For patients with renal impairment. Use recommended dosage regimen when creatinine clearance is above 30 ml/min. If creatinine clearance is between 15 and 30 ml/min, use one-half the usual regimen. Bactrim is not recommended if creatinine clearance is below 15 ml/min.

ACUTE EXACERBATIONS OF CHRONIC BRONCHITIS IN ADULTS:

Usual adult dosage: 1 DS tablet (double strength), 2 tablets (single strength) or 4 teasp. (20 ml) b.i.d. for 14 days.

PNEUMOCYSTIS CARINII PNEUMONITIS:

Recommended dosage: 20 mg/kg trimethoprim and 100 mg/kg sulfamethoxazole per 24 hours in equal doses every 6 hours for 14 days. See complete product information for suggested children's dosage table.

Supplied: Double Strength (DS) tablets, each containing 160 mg trimethoprim and 800 mg sulfamethoxazole, bottles of 100; Tel-E-Dose[®] packages of 100, Prescription Paks of 20 and 28. Tablets, each containing 80 mg trimethoprim and 400 mg sulfamethoxazole—bottles of 100 and 500; Tel-E-Dose[®] packages of 100, Prescription Paks of 40. Pediatric Suspension, containing 40 mg trimethoprim and 200 mg sulfamethoxazole per teaspoonful (5 ml); cherry-flavored—bottles of 100 ml and 16 oz (1 pint). Suspension, containing 40 mg trimethoprim and 200 mg sulfamethoxazole per teaspoonful (5 ml); fruit-licorice flavored—bottles of 16 oz (1 pint).



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Bactrim continues to demonstrate high clinical effectiveness in recurrent urinary tract infections. Bactrim reaches effective levels in urine, serum, and renal tissue¹... the trimethoprim component diffuses into vaginal secretions in bactericidal concentrations¹... and in the fecal flora, Bactrim effectively suppresses Enterobacteriaceae^{1,2} with little resulting emergence of resistant organisms.

1. Rubin RH, Swartz MN. *N Engl J Med* 303:426-432, Aug 21, 1980. 2. Data on file, Medical Department, Hoffmann-La Roche Inc.

maximizes results with B.I.D. convenience

BactrimTM DS

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Official Journal of the NORTH CAROLINA MEDICAL SOCIETY

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1982 Annual Meeting: May 6-9,
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Oct. 3, Southern Pines

ONE OF THE VITAL SIGNS OF ANXIOUS DEPRESSION: INSOMNIA

Others to look for:

agitation

anorexia

feelings of guilt
and worthlessness

fatigue

palpitations

headache

vague aches
and pains

sadness

psychic and
somatic anxiety



Artist's conception,
looking out from the human eye
as conceived in a schematic model.

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Limbitrol brings a special—and specific—quality of relief to most anxious depressed patients. Insomnia, for example, responds with particular promptness. Other symptoms likely to respond within the first week of treatment include anorexia, agitation and psychic and somatic anxiety. And, as the depression and anxiety are alleviated, in many cases so are such related somatic symptoms as headache, palpitations, and various vague aches and pains.

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Many patients respond readily to a single bedtime dose of Limbitrol, a convenient schedule that may enhance compliance and helps relieve the insomnia associated with anxious depression. Limbitrol also offers a choice of other regimens: t.i.d., or a divided dose with the larger portion h.s. In all cases, caution patients about the combined effects with alcohol or other CNS depressants and about activities requiring complete mental alertness, such as driving or operating machinery.

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Limbitrol® IV

Tablets 5-12.5 each containing 5 mg chlordiazepoxide and 12.5 mg amitriptyline
(as the hydrochloride salt)

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(as the hydrochloride salt)

Specific therapy with h.s. dosage convenience

Please see summary of complete product information on following page.

LIMBITROL® TABLETS Tranquilizer—Antidepressant

Before prescribing, please consult complete product information, a summary of which follows:

Indications: Relief of moderate to severe depression associated with moderate to severe anxiety

Contraindications: Known hypersensitivity to benzodiazepines or tricyclic antidepressants. Do not use with monoamine oxidase (MAO) inhibitors or within 14 days following discontinuation of MAO inhibitors since hyperpyretic crises, severe convulsions and deaths have occurred with concomitant use, then initiate cautiously, gradually increasing dosage until optimal response is achieved. Contraindicated during acute recovery phase following myocardial infarction

Warnings: Use with great care in patients with history of urinary retention or angle-closure glaucoma. Severe constipation may occur in patients taking tricyclic antidepressants and anticholinergic-type drugs. Closely supervise cardiovascular patients (Arrhythmias, sinus tachycardia and prolongation of conduction time reported with use of tricyclic antidepressants, especially high doses). Myocardial infarction and stroke reported with use of this class of drugs. Caution patients about possible combined effects with alcohol and other CNS depressants and against hazardous occupations requiring complete mental alertness (e.g., operating machinery, driving)

Usage in Pregnancy: Use of minor tranquilizers during the first trimester should almost always be avoided because of increased risk of congenital malformations as suggested in several studies. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.

Since physical and psychological dependence to chlordiazepoxide have been reported rarely, use caution in administering Limbitrol to addiction-prone individuals or those who might increase dosage, withdrawal symptoms following discontinuation of either component alone have been reported (nausea, headache and malaise for amitriptyline, symptoms [including convulsions] similar to those of barbiturate withdrawal for chlordiazepoxide)

Precautions: Use with caution in patients with a history of seizures, in hyperthyroid patients or those on thyroid medication, and in patients with impaired renal or hepatic function. Because of the possibility of suicide in depressed patients, do not permit easy access to large quantities in these patients. Periodic liver function tests and blood counts are recommended during prolonged treatment. Amitriptyline component may block action of guanethidine or similar antihypertensives. Concomitant use with other psychotropic drugs has not been evaluated. Sedative effects may be additive. Discontinue several days before surgery. Limit concomitant administration of ECT to essential treatment. See Warnings for precautions about pregnancy. Limbitrol should not be taken during the nursing period. Not recommended in children under 12. In the elderly and debilitated, limit to smallest effective dosage to preclude ataxia, oversedation, confusion or anticholinergic effects.

Adverse Reactions: Most frequently reported are those associated with either component alone: drowsiness, dry mouth, constipation, blurred vision, dizziness and bloating. Less frequently occurring reactions include vivid dreams, impotence, tremor, confusion and nasal congestion. Many depressive symptoms including anorexia, fatigue, weakness, restlessness and lethargy have been reported as side effects of both Limbitrol and amitriptyline. Granulocytopenia, jaundice and hepatic dysfunction have been observed rarely.

The following list includes adverse reactions not reported with Limbitrol but requiring consideration because they have been reported with one or both components or closely related drugs:

Cardiovascular: Hypotension, hypertension, tachycardia, palpitations, myocardial infarction, arrhythmias, heart block, stroke

Psychiatric: Euphoria, apprehension, poor concentration, delusions, hallucinations, hypomania and increased or decreased libido

Neurologic: Incoordination, ataxia, numbness, tingling and paresthesias of the extremities, extrapyramidal symptoms, syncope, changes in EEG patterns

Anticholinergic: Disturbance of accommodation, paralytic ileus, urinary retention, dilatation of urinary tract

Allergic: Skin rash, urticaria, photosensitization, edema of face and tongue, pruritus

Hematologic: Bone marrow depression including agranulocytosis, eosinophilia, purpura, thrombocytopenia

Gastrointestinal: Nausea, epigastric distress, vomiting, anorexia, stomatitis, peculiar taste, diarrhea, black tongue

Endocrine: Testicular swelling and gynecomastia in the male, breast enlargement, galactorrhea and minor menstrual irregularities in the female and elevation and lowering of blood sugar levels

Other: Headache, weight gain or loss, increased perspiration, urinary frequency, mydriasis, jaundice, alopecia, parotid swelling

Overdose: Immediately hospitalize patient suspected of having taken an overdose. Treatment is symptomatic and supportive. IV administration of 1 to 3 mg physostigmine salicylate has been reported to reverse the symptoms of amitriptyline poisoning. See complete product information for manifestation and treatment.

Dosage: Individualize according to symptom severity and patient response. Reduce to smallest effective dosage when satisfactory response is obtained. Larger portion of daily dose may be taken at bedtime. Single *h.s.* dose may suffice for some patients. Lower dosages are recommended for the elderly. Limbitrol 10-25, initial dosage of three to four tablets daily in divided doses, increased to six tablets or decreased to two tablets daily as required. Limbitrol 5-12.5, initial dosage of three to four tablets daily in divided doses, for patients who do not tolerate higher dosages.

How Supplied: White, film-coated tablets, each containing 10 mg chlordiazepoxide and 25 mg amitriptyline (as the hydrochloride salt) and blue, film-coated tablets, each containing 5 mg chlordiazepoxide and 12.5 mg amitriptyline (as the hydrochloride salt)—bottles of 100 and 500; Tel-E-Dose® packages of 100, available in trays of 4 reverse-numbered boxes of 25, and in boxes containing 10 strips of 10, Prescription Paks of 50.

NORTH CAROLINA MEDICAL SOCIETY MEETINGS

PLAN AHEAD

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Pinehurst, N.C.

SPORTS MEDICINE SYMPOSIUM

July 2-4, 1982

Blockade Runner

Wrightsville Beach, N.C.

COMMITTEE CONCLAVE

September 29-October 3, 1982

Mid Pines Club

Southern Pines, N.C.



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MEDICAL JOURNAL

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Rosenthal, P. and Liebman, W.M: Comparative study of stool examinations, duodenal aspiration, and pediatric Entero-Test for giardiasis in children. *J. PEDIAT.* 96: 278 (Feb.) 1980.

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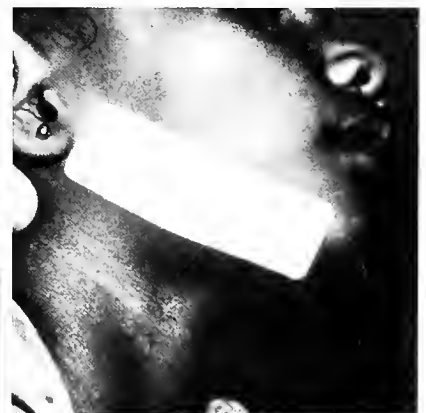
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INDICATIONS:

Although the principal indication for cloxacillin sodium is in the treatment of infections due to penicillinase-producing staphylococci, it may be used to initiate therapy in such patients in whom a staphylococcal infection is suspected. (See Important Note below.)

Bacteriologic studies to determine the causative organisms and their sensitivity to cloxacillin sodium should be performed.

IMPORTANT NOTE

When it is judged necessary that treatment be initiated before definitive culture and sensitivity results are known, the choice of cloxacillin sodium should take into consideration the fact that it has been shown to be effective only in the treatment of infections caused by pneumococci, Group A beta-hemolytic streptococci, and penicillin G-resistant and penicillin G-sensitive staphylococci. If the bacteriology report later indicates the infection is due to an organism other than a penicillin G-resistant staphylococcus sensitive to cloxacillin sodium, the physician is advised to continue therapy with a drug other than cloxacillin sodium or any other penicillinase-resistant semi-synthetic penicillin.

Recent studies have reported that the percentage of staphylococcal isolates resistant to penicillin G outside the hospital is increasing, approximating the high percentage of resistant staphylococcal isolates found in the hospital. For this reason, it is recommended that a penicillinase-resistant penicillin be used as initial therapy for any suspected staphylococcal infection until culture and sensitivity results are known.

Cloxacillin sodium is a compound that acts through a mechanism similar to that of methicillin against penicillin G-resistant staphylococci. Strains of staphylococci resistant to methicillin have existed in nature and it is known that the number of these strains reported has been increasing. Such strains of staphylococci have been capable of producing serious disease, in some instances resulting in fatality. Because of this, there is concern that widespread use of the penicillinase-resistant penicillins may result in the appearance of an increasing number of staphylococcal strains which are resistant to these penicillins.

Methicillin-resistant strains are almost always resistant to all other penicillinase-resistant penicillins (cross-resistance with cephalosporin derivatives also occurs frequently). Resistance to any penicillinase-resistant penicillin should be interpreted as evidence of clinical resistance to all, in spite of the fact that minor variations in *in vitro* sensitivity may be encountered when more than one penicillinase-resistant penicillin is tested against the same strain of staphylococcus.

CONTRAINDICATIONS:

A history of a previous hypersensitivity reaction to any of the penicillins is a contraindication.

RESULTS OF ORAL THERAPY revealed a high percentage of treatment failures with penicillin V potassium, but no failures with Tegopen.

		Given Tegopen® (cloxacillin sodium)	Given penicillin V-K
<i>Staphylococcus aureus</i>	(78 patients)	39	39
Returned to clinic at one week		29†	38†
Treatment failure at one week		0	18 (47.4%)
<i>Staphylococcus aureus</i> and <i>Streptococcus pyogenes</i>	(9 patients)	4	5
Returned to clinic at one week		4	5
Treatment failure at one week		0	2 (40%)
No initial bacterial growth	(14 patients)	9	5
All 14 healed, regardless of which antibiotic was administered.			
Beta-hemolytic <i>Streptococcus</i>	(1 patient)	0	1
TOTALS:	102 patients	52 patients	50 patients

†Eleven patients did not return for their one-week checkup. These were all called by telephone, and their families reported

the lesions had healed. One patient was dropped from the study, early, because of adverse reaction to medication.

STUDY: DESCRIPTION/PROTOCOL

- 102 nonselected subjects, with initial bacteriology as follows: 77% *Staphylococcus aureus*, 9% mixed *Staphylococcus aureus* and *Streptococcus pyogenes*, and 1% beta-hemolytic *Streptococcus*.†
- All patients were given randomized therapy—Tegopen capsules or oral solution, or penicillin V-K tablets or oral solution, in recommended dosages according to body weight.

- All patients were evaluated after one week's therapy. If there was no improvement, therapy was switched to the other antibiotic. The "other antibiotic" proved to be Tegopen 100% of the time because no treatment failures had occurred with Tegopen.
- A final assessment of progress was made two weeks after initiation of Tegopen therapy.

†The remainder, to equal 100%, consisted of 14 patients (13%) who exhibited no initial bacterial growth. These 14 were all healed, whether given Tegopen or penicillin V-K.

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WARNING:

Serious and occasionally fatal hypersensitivity (anaphylactoid) reactions have been reported in patients on penicillin therapy. Although anaphylaxis is more frequent following parenteral therapy it has occurred in patients on oral penicillins. These reactions are more apt to occur in individuals with a history of sensitivity to multiple allergens.

There have been well documented reports of individuals with a history of penicillin hypersensitivity reactions who have experienced severe hypersensitivity reactions when treated with a cephalosporin. Before therapy with a penicillin, careful inquiry should be made concerning previous hypersensitivity reactions to penicillins, cephalosporins, and other allergens. If an allergic reaction occurs, the drug should be discontinued and the patient treated with the usual agents, e.g., pressor amines, antihistamines, and corticosteroids.

Safety for use in pregnancy has not been established.

PRECAUTIONS:

The possibility of the occurrence of superinfections with mycotic organisms or other pathogens should be kept in mind when using this compound, as with other antibiotics. If superinfection occurs during therapy, appropriate measures should be taken.

As with any potent drug, periodic assessment of organ system function, including renal, hepatic, and hematopoietic, should be made during long-term therapy.

ADVERSE REACTIONS:

Gastrointestinal disturbances, such as nausea, epigastric discomfort, flatulence, and loose

stools, have been noted by some patients. Mildly elevated SGOT levels (less than 100 units) have been reported in a few patients for whom pretherapeutic determinations were not made. Skin rashes and allergic symptoms, including wheezing and sneezing, have occasionally been encountered. Eosinophilia, with or without overt allergic manifestations, has been noted in some patients during therapy.

USUAL DOSAGE:

Adults: 250 mg. q 6h.

Children: 50 mg./Kg./day in equally divided doses q 6h. Children weighing more than 20 Kg should be given the adult dose. Administer on empty stomach for maximum absorption.

N.B.: INFECTIONS CAUSED BY GROUP A BETA-HEMOLYTIC STREPTOCOCCI SHOULD BE TREATED FOR AT LEAST 10 DAYS TO HELP PREVENT THE OCCURRENCE OF ACUTE RHEUMATIC FEVER OR ACUTE GLOMERULONEPHRITIS.

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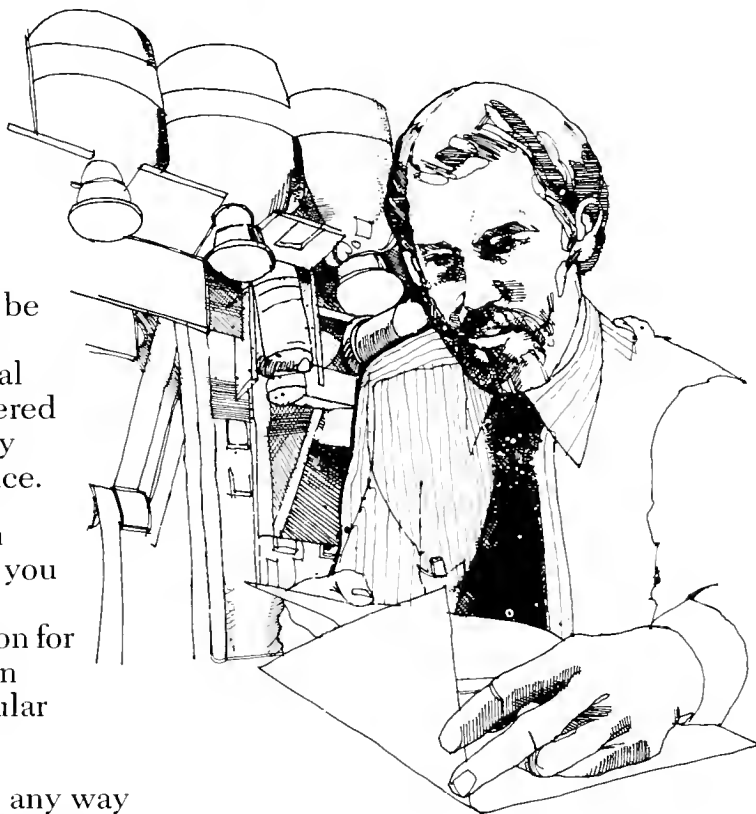
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An added complication... in the treatment of bacterial bronchitis*



Summary.

Read the package literature for prescribing information.

Indications and Usage: Cefclor® (cefadroxil, Lilly) is indicated in the treatment of the following infections when caused by susceptible strains of the designated microorganisms:

Lower respiratory infections, including pneumonia caused by *Streptococcus pneumoniae* (*Diplococcus pneumoniae*), *Haemophilus influenzae*, and *S. pyogenes* (group A beta-hemolytic streptococci).

Appropriate culture and susceptibility studies should be performed to determine susceptibility of the causative organism to Cefclor.

Contraindication: Cefclor is contraindicated in patients with a known allergy to the cephalosporin group of antibiotics.

Warnings: IN PENICILLIN-SENSITIVE PATIENTS, CEPHALOSPORIN ANTIBIOTICS SHOULD BE ADMINISTERED CAUTIOUSLY. THERE IS CLINICAL AND LABORATORY EVIDENCE OF PARTIAL CROSS-REACTIVITY OF THE PENICILLINS AND THE CEPHALOSPORINS. THERE ARE INSTANCES IN WHICH PATIENTS HAVE HAD REACTIONS, INCLUDING ANAPHYLAXIS, TO BOTH DRUG CLASSES. Antibiotics, including Cefclor, should be administered cautiously to any patient who has demonstrated some form of allergy, particularly to drugs.

Precautions: If an allergic reaction to cefadroxil occurs, the drug should be discontinued, and, if necessary, the patient should be treated with appropriate agents, e.g., pressor amines, antihistamines, corticosteroids.

Prolonged use of cefadroxil may result in the overgrowth of susceptible organisms. Careful observation of the patient is essential. If superinfection occurs during therapy, appropriate measures should be taken.

Positive direct Coombs' tests have been reported during treatment with the cephalosporin antibiotics. In hematologic studies or in transfusion cross-matching procedures when globulin tests are performed on the minor side or in Coombs' testing of newborns whose mothers have received cephalosporin antibiotics before parturition, it should be recognized that a false Coombs' test may be due to the drug.

Cefclor should be administered with caution in the presence of markedly impaired renal function. Under such a condition, careful clinical observation and laboratory studies should be made. Because safe dosage may be lower than that usually recommended as a result of administration of Cefclor, a false-positive reaction to glucose in the urine may occur. This has been observed with Benedict's and Fehling's solutions and also with Clinistix® tests but not with Tes-Tape® (Glucose Enzymatic Test Strip, P. Lilly).

Usage in Pregnancy: Although no teratogenic or antifertility effects were seen in reproduction studies in mice and rats receiving up to 12 times the maximum human dose or in fetuses given three times the maximum human dose, the safety of this drug for use in human pregnancy has not been established. The benefits of the drug in pregnant women should be weighed against a possible risk to the fetus.

Usage in Infancy: Safety of this product for use in infants less than one month of age has not been established.

Adverse Reactions: Adverse effects considered related to cefadroxil therapy are uncommon and are listed below. Gastrointestinal symptoms occur in about 2.5 percent of patients and include diarrhea (1 in 70) and nausea and vomiting (1 in 90).

As with other broad-spectrum antibiotics, colitis, including rare cases of pseudomembranous colitis, has been reported in conjunction with therapy with Cefclor.

Hypersensitivity reactions have been reported in about 1.5

Some ampicillin-resistant strains of *Haemophilus influenzae*—a recognized complication of bacterial bronchitis*—are sensitive to treatment with Cefclor.¹⁻⁶

In clinical trials, patients with bacterial bronchitis due to susceptible strains of *Streptococcus pneumoniae*, *H. influenzae*, *S. pyogenes* (group A beta-hemolytic streptococci), or multiple organisms achieved a satisfactory clinical response with Cefclor.⁷

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Puivules®, 250 and 500 mg

percent of patients and include morbilliform eruptions (1 in 100). Pruritus, urticaria, and positive Coombs tests each occur in less than 1 in 200 patients. Cases of serum-sickness-like reactions (erythema multiforme or the above skin manifestations accompanied by arthritis/arthritis and, frequently, fever) have been reported. These reactions are apparently due to hypersensitivity and have usually occurred during or following a second course of therapy with Cefclor® (cefadroxil). Such reactions have been reported more frequently in children than in adults. Signs and symptoms usually occur a few days after initiation of therapy and subside within a few days after cessation of therapy. No serious sequelae have been reported. Antihistamines and corticosteroids appear to enhance resolution of the syndrome.

Cases of anaphylaxis have been reported, half of which have occurred in patients with a history of penicillin allergy.

Other effects considered related to therapy included eosinophilia (1 in 50 patients) and genital pruritus or vaginitis (less than 1 in 100 patients).

Causal Relationship Uncertain—Transitory abnormalities in clinical laboratory test results have been reported. Although they were of uncertain etiology, they are listed below to serve as alerting information for the physician.

Hepatic—Slight elevations in SGOT, SGPT, or alkaline phosphatase values (1 in 40).

Hematopoietic—Transient fluctuations in leukocyte count, predominantly lymphocytosis occurring in infants and young children (1 in 40).

Renal—Slight elevations in BUN or serum creatinine (less than 1 in 500) or abnormal urinalysis (less than 1 in 200). [100261R]

*Many authorities attribute acute infectious exacerbation of chronic bronchitis to either *S. pneumoniae* or *H. influenzae*.

Note: Cefclor is contraindicated in patients with known allergy to the cephalosporins and should be given cautiously to penicillin-allergic patients.

Penicillin is the usual drug of choice in the treatment and prevention of streptococcal infections, including the prophylaxis of rheumatic fever. See prescribing information.

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Additional information available to the profession on request from Eli Lilly and Company, Indianapolis, Indiana 46285.

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alcoholics. Ethanol may produce many effects that together bring about nutritional deficiencies, so that alcoholism affects nutrition at many levels.¹

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Indications: Prophylactic or therapeutic nutritional supplementation in physiologically stressful conditions, including conditions causing depletion, or reduced absorption or bioavailability of essential vitamins and minerals; certain conditions resulting from severe B-vitamin or ascorbic acid deficiency; or conditions resulting in increased needs for essential vitamins and minerals.

Contraindications: Hypersensitivity to any component.

Warnings: Not for pernicious anemia or other megaloblastic anemias where vitamin B₁₂ is deficient. Neurologic involvement may develop or progress, despite temporary remission of anemia, in patients with vitamin B₁₂ deficiency who receive supplemental folic acid and who are inade-

quately treated with B₁₂.

Precautions: *General:* Certain conditions may require additional nutritional supplementation. During pregnancy, supplementation with vitamin D and calcium may be required. Not intended for treatment of severe specific deficiencies. *Information for the Patient:* Toxic reactions have been reported with injudicious use of certain vitamins and minerals. Urge patients to follow specific dosage instructions. Keep out of reach of children. *Drug and Treatment Interactions:* As little as 5 mg pyridoxine daily can decrease the efficacy of levodopa in the treatment of parkinsonism. Not recommended for patients undergoing such therapy.

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References: 1. Shaw S, Lieber CS: Nutrition and alcoholism, chap. 40, in *Modern Nutrition in Health and Disease*, edited by Goodhart RS, Shils ME, Philadelphia, Lea & Febiger, 1980, pp. 1220, 1237. 2. Watkin DM: Nutrition for the aging and the aged, chap. 28, in *Modern Nutrition in Health and Disease*, op. cit., p. 781. 3. Shils ME, Randall HT: Diet and nutrition in the care of the surgical patient, chap. 36, in *Modern Nutrition in Health and Disease*, op. cit., pp. 1084, 1089, 1114. 4. Dixon RE: *Ann Intern Med* 89 (Part 2): 749-753, Nov 1978. 5. Committee on Dietary Allowances, National Research Council: Recommended Dietary Allowances, ed 9. Washington, National Academy of Sciences, 1980, p. 13.

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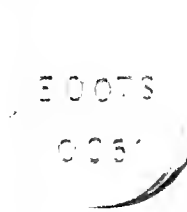
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DESCRIPTION Forty-five milliliters of SU-TON contains the following ingredients: Pentylenetetrazol, 30 mg • Niacin, 50 mg • Vitamin B-1, 10 mg • Vitamin B-2, 5 mg • Vitamin B-6, 1 mg • Vitamin B-12, 3 mcg • Manganese (as Manganese Sulfate), 1 mg • Magnesium (as Magnesium Sulfate), 2 mg • Zinc (as Zinc Sulfate), 1 mg • Iron (as Ferric Pyrophosphate, Soluble), 22 mg • Alcohol, 18%
INDICATIONS AND USAGE SU-TON contains pentylenetetrazol which may be helpful in the older patient as an analeptic agent when mental confusion and memory defects are present. SU-TON also contains vitamins, trace minerals, and iron, for those patients who may benefit by preventing the development of a deficiency.

CONTRAINDICATIONS Epilepsy, convulsive disorders or known history of sensitivity to any of the listed active ingredients.

WARNINGS The safety of this preparation during pregnancy and lactation has not been established. Use of this drug requires that the physician evaluate the potential benefits of the drug against any possible hazard to the mother and child.

PRECAUTIONS Although there are no absolute contraindications to pentylenetetrazol, it should be used with caution in epileptic patients or those known to have a low convulsive threshold or a focal brain lesion. Caution should be exercised when treating patients with high doses of SU-TON who have heart disease. While pentylenetetrazol does not act directly on the myocardium, the results from central vagal stimulation could cause bradycardia.

ADVERSE REACTIONS Pentylenetetrazol in high doses may produce toxic symptoms typical of central nervous system stimulants, which act on the higher motor centers and the spinal cord. Convulsions resulting from this drug are spontaneous and are not induced by external stimuli. They usually last for several minutes and are followed by profound depression and respiratory paralysis. Death has been reported from the ingestion of 10 grams of pentylenetetrazol.

DRUG ABUSE Drug dependence has not been reported with SU-TON.

OVERDOSSAGE Signs and symptoms of acute overdose may be due principally from overstimulation of the central nervous system and from excessive vasodilatation with resulting autonomic nervous system imbalance. The symptoms may include the following: vomiting, agitation, tremors, hyperreflexia, sweating, confusion, hallucinations, headache, hyperpyrexia, tachycardia. Treatment consists of appropriate supportive measures. If signs and symptoms are not too severe and the patient is conscious, gastric evacuation may be accomplished by induction of emesis or gastric lavage. Intensive care must be provided to maintain adequate circulation and respiratory exchange.

DOSAGE AND ADMINISTRATION One tablespoonful (15 ml) 3 times a day 20-30 minutes before meals. This drug is not for use in children under 12 years of age.

HOW SUPPLIED Bottles of 473 ml (16 fl. oz.)

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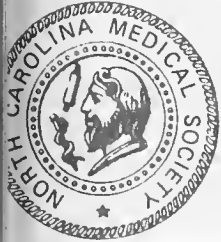
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PRESIDENT'S NEWSLETTER

NORTH CAROLINA MEDICAL SOCIETY

No. 11

APRIL 1982

Dear Colleagues:

The Pre-Proposal Conference for "Potential Offerers" was attended by representatives of twenty-one (21) large corporations, on March 2, 1982. Attendance at this Conference makes it possible for each of these corporations to submit a proposal in bid for the contract to administer the State Employees' Health Plan. Some who attended may choose not to submit a proposal, but proposals will not be accepted from anyone who did not attend the Conference. All proposals must be submitted on April 8, and the successful bidder will be announced on May 10. In the last NEWSLETTER, I discussed some of the criteria for the Plan. Some of our members wrote to request additional information and, thus far, all concerned the "second surgical opinion" requirement.

Councilor Robert H. Shackelford, also Speaker of the Congress of Delegates of the American Academy of Family Practice, wrote: "It would appear to me that any patient's primary physician would be in a much better position to render second opinion on cholecystectomy, total hysterectomy, tonsillectomy, and adenoidectomy than another surgically trained individual." I share the concern of each of you. The North Carolina Medical Society representatives, who met with the appropriate Legislative Committee, addressed the "second surgical opinion," but we met with no success and the provision remained unchanged. However, the potential offerers were allowed to submit written questions which were answered by the State's Contract Office, as follows:

- Q. "What are the requirements for contracting with physicians for the second opinion program? What current arrangements does BCBS have?"
A. "New administrator will set up own procedure."
- Q. "Can a patient only get second surgical opinions from surgeons whose names are provided by the Plan Administrator?"
A. "Yes."
- Q. "Can the patient pick his/her own surgeon for the second opinion?"
A. "No."
- Q. "Is the intent to pay 80% of 90% of Plan benefits in the absence of a second surgical opinion to apply this reduction only to physician charges and room and board to the exclusion of ancillary charges?"
A. "Yes."
- Q. Most effective second opinion programs do not limit second opinions to surgeons since medical conditions may indicate that the patient's condition for which the surgery is being considered may be better treated conservatively without surgery. Is it recommended that the second opinion benefits be extended to 'medical specialists'?"
A. "Yes, if Board Certified" (Note: This is contradictory to statements in the criteria of the "Request for Proposal".)

It is always good to receive answers to the NEWSLETTER, if only to know that it is being read. The Council was advised that we would probably receive no more than

an 18% response to the Questionnaire distributed to our members. I am delighted to tell you that we have been overwhelmed by your response! Thus far, with another week to go, 42% of the 6,100 Questionnaires have been completed and returned. After careful evaluation by an "Overview Committee" of physician members, your opinions will be reported to the Executive Council on April 3 and to the House of Delegates for action at the Annual Meeting. I am deeply grateful for your interest and response. One exhausted "wag" on the committee remarked, "Jo, you may not have done anything else this year, but you surely stirred them up." I plead guilty to wanting every one of our members to be "stirred up" so that this Society can be 100% effective in its undertakings!

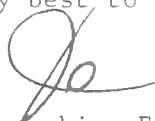
All resolutions to be deliberated by the House of Delegates have been received. Seven (7) County Societies have submitted resolutions concerning drunken drivers as a public health menace. Other resolutions concern requirements and qualifications of local health directors, "no code blue" legislation, community mental health programs, the living will, AMA recruitment, repeal of the PSRO legislation, method of election of North Carolina Medical Society Officers, campaign expenses of North Carolina Medical Society candidates for AMA office, the North Carolina Medical Journal, medical malpractice legislation, and medical student loans. Various reports to be deliberated concern physician assistants, psychiatric care of prisoners, a statewide Medicaid fee schedule, and an increase in North Carolina Medical Society dues. Each of these issues will be discussed in Reference Committees on Thursday, May 6, at 2:00 p.m. in the Pinehurst Hotel. Every member of the Society can attend and enter into all discussions. This is the membership's forum where policy is promulgated. Come, participate, and be heard! Show the House of Delegates that you are concerned with these issues which will greatly affect your practice and your future life!

Governor Hunt has appointed Fred G. Patterson, M.D., to the Governor's Task Force on Drunken Drivers. For many years, Fred has worked with the NCMS Traffic Safety Committee and the Highway Safety Branch of the Division of Health Services. Since he will represent the Society on the Task Force, he is anxious to hear your thoughts on a solution to the problem of drunken drivers. He asks that you write him at 1001 S. Hamilton Rd., Chapel Hill, N.C. 27514.

I was privileged to attend the first presentation of MALPRACTICE AWARENESS STAT. Several months ago, I wrote you that Ira Hardy's ad hoc Committee on Risk Management was working with Medical Mutual Insurance Company and St. Paul to present a three-hour program on Risk Management. The first presentation by Medical Mutual, on March 13, was oversubscribed and, necessarily, limited to Wake County physicians. It was so good that I did not see a single eye shut or head nod when the lights were dimmed for slides. Within one week, each of us received official credit for 3 hours (Category 1) CME and "5% individual premium discount for each of the next three (3) years (effective with policies renewed more than sixty (60) days following the presentation)". This commitment is from Medical Mutual only, but I feel sure that St. Paul will move quickly to compete. A second presentation will come on Wednesday, May 5, at the Pinehurst Hotel, just prior to the Annual Meeting. Ira Hardy, the ad hoc Committee on Risk Management, and Wayne Parker (of Medical Mutual) deserve our gratitude and a tremendous ovation from each of us!


On that happy note, I wish for you and your family a happy and wonderful Easter season!

My best to you and your family,



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Ultrasound and a Neural Tube Screening Program in North Carolina

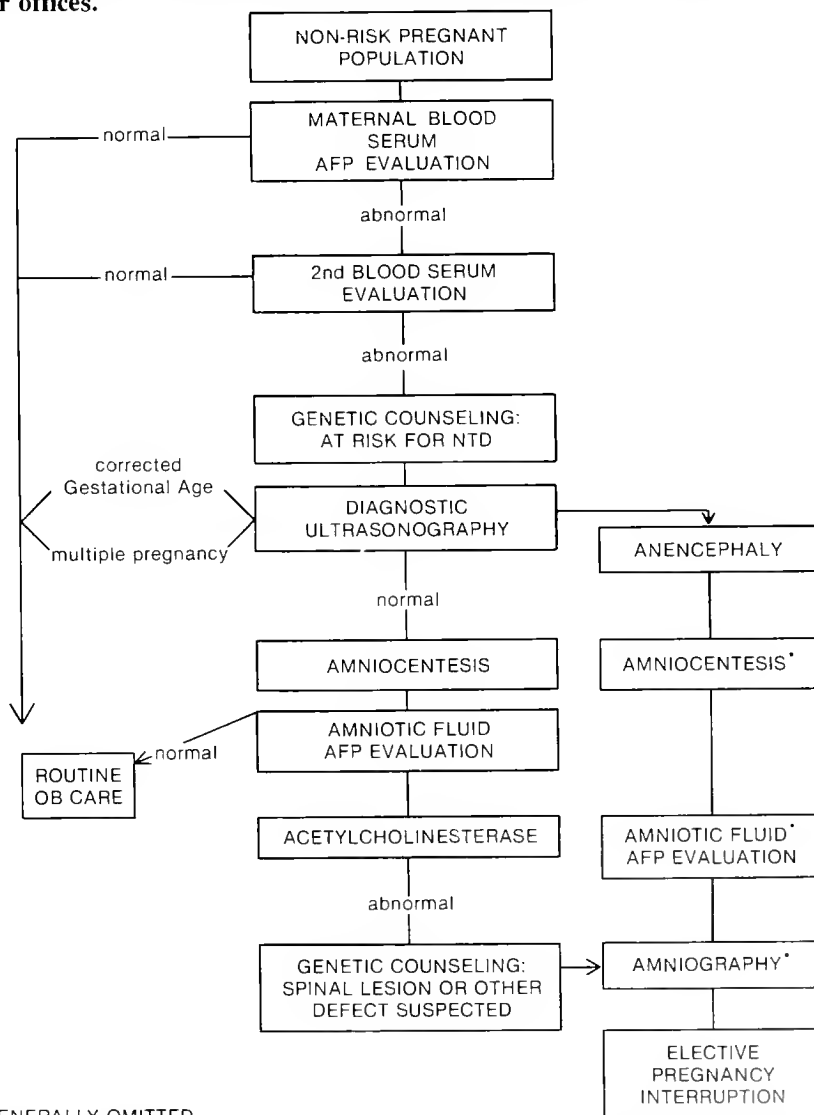
Lewis H. Nelson, M.D., Stephen G. Anderson, M.D.,
Sherrin G. Sowers, M.A., and Barbara K. Burton, M.D.

ABSTRACT In the United States, the risk of a neural tube defect (NTD) is approximately two per thousand births¹ with 90% of these infants born to families with no history of the disorder. A pilot study for the prenatal detection of neural tube defects has been conducted in Forsyth County, North Carolina. During 1979-1980, 1,944 patients were screened by maternal serum alpha fetoprotein (MSAFP) and the next year 2,339 patients were screened representing an increase from 42% to 54.6% of total births. Ultrasound examinations were performed on 116 of the 4,283 patients (2.7%). Approximately one-third of those scanned had either an incorrectly dated last menstrual period, multiple gestation, or fetal death in utero. Although evaluation of pregnancies for birth defects requires considerable skill and complex equipment, at least 30% of the initial diagnoses made by ultrasound evaluation can be made by physicians in their offices.

IN the United States, the risk of a neural tube defect (NTD) is approximately two per thousand births¹ with 90% of these infants born to families with no known history of a previous disorder. A pilot study for the prenatal detection of neural tube defects has been conducted in Forsyth County, North Carolina. Others²⁻⁷ have described their experiences in the United Kingdom and the United States with prenatal NTD detection by measuring the concentration of maternal serum alpha fetoprotein (MSAFP). Ultrasonography is an important step in the evaluation of patients with elevated MSAFP. We present here our experience with ultrasound as it relates to screening in North Carolina.

MATERIALS AND METHODS

The protocol for screening is shown in Figure 1. We defined elevated MSAFP as 2.5 times the median value and low MSAFP as approximately 0.3 times the median. These definitions are similar to the above studies.²⁻⁷ All patients undergoing ultrasound examination were initially scanned using a real time linear array scanner with double focused 3.5 mHz or 5.0 mHz trans-



*GENERALLY OMITTED

Figure 1: Flow chart for the pilot project. Amniography is generally omitted in firm diagnosis.

From the Department of Obstetrics and Gynecology and Pediatrics, Bowman Gray School of Medicine, 300 S. Hawthorne Road, Winston-Salem, N.C. 27103

Reprint requests to Dr. Nelson, Department of Obstetrics and Gynecology

ducers.* Amniography is performed for diagnosis unless the diagnosis is certain on scanning.

RESULTS

During 1979-1980, 1,944 patients or 42% of the total births were screened. This increased to 2,339 patients or 54.6% of recorded births in the next year (Table I). Ultrasound examinations were performed on 116 patients because of elevated or low MSAFP and, in some instances, maternal anxiety following only one elevated MSAFP (Table II). Of the patients who underwent ultrasound examination, 34.4% had either an incorrectly dated last menstrual period, multiple gestation, or fetal death in utero. Nineteen patients with elevated MSAFP declined any further study after their initial ultrasound examination and presumably delivered normal infants. Seven abnormalities were indicated by elevated serum AFP and six were detected at ultrasound examination. Following amniocentesis and amniography, the six diagnosed were an open neural tube with concomitant abnormalities in four patients, severe oligohydramnios in one, and multiple congenital anomalies in one (Figures 2-6). The multiple congenital anomalies were considered secondary to entrapment of fetal structure by amniotic bands because of the constrictions found around the fetal extremities (Figure 7). The case missed on ultrasound is discussed below.

TABLE I

Forsyth County NTD Screening Program

	1979-80		1980-81		Total	Percent
	No.	Percent	No.	Percent		
Screened	1944	100.0	2339	100.0	4273	100.0
1st elevated MSAFP	89	4.6	93	4.0	182	4.2
2nd elevated MSAFP	51	2.6	47	2.0	98	2.3
Ultrasound	64	3.3	52	2.2	116	2.7
Amniocentesis	29	1.49	25	1.1	54	1.3

TABLE II

Summary of Ultrasound Examinations — Elevated MSAFP

	1979-1980		1980-1981		Total	Percent
	No.	Percent of Patients Scanned	No.	Percent of Patients Scanned		
Scanned	64	100.0	52	100.0	116	100.0
Dates in error	8	12.5	10	19.2	18	15.5
Multiple gestation	7	10.9	8	15.4	15	12.9
Fetal death	5	7.8	2	3.8	7	6.0
Abnormality detected	5	7.8	1	1.9	6	5.2
Declined further study	13	20.3	6	11.5	19	16.4
Proceeded to amniocentesis	29	43.8	25	48.1	54	46.6

*Advanced Diagnostic Research, Tempe, Arizona.



Figure 2: The meningocele sac (arrow) is seen posterior to the fetal sacrum and body (B).

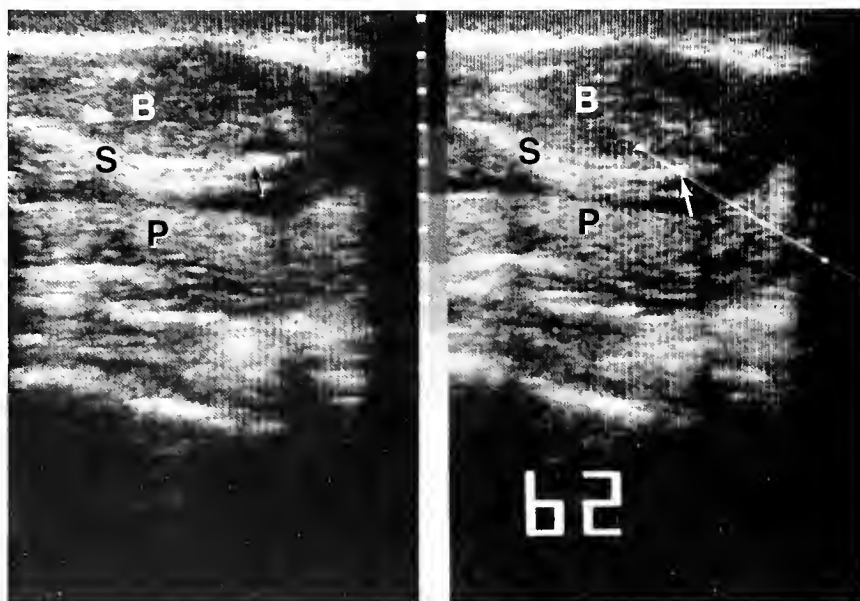


Figure 3: The defect is suggested by the increased width (arrow) of the fetal spine (S). (P = placenta).

AFP, 62 (77.5%) had incorrect dates, a fetal demise, were not pregnant, or had a molar pregnancy (Table III). The remainder had correct dates or were lost to follow-up.

DISCUSSION

Physicians doing office ultrasound need adequate training which

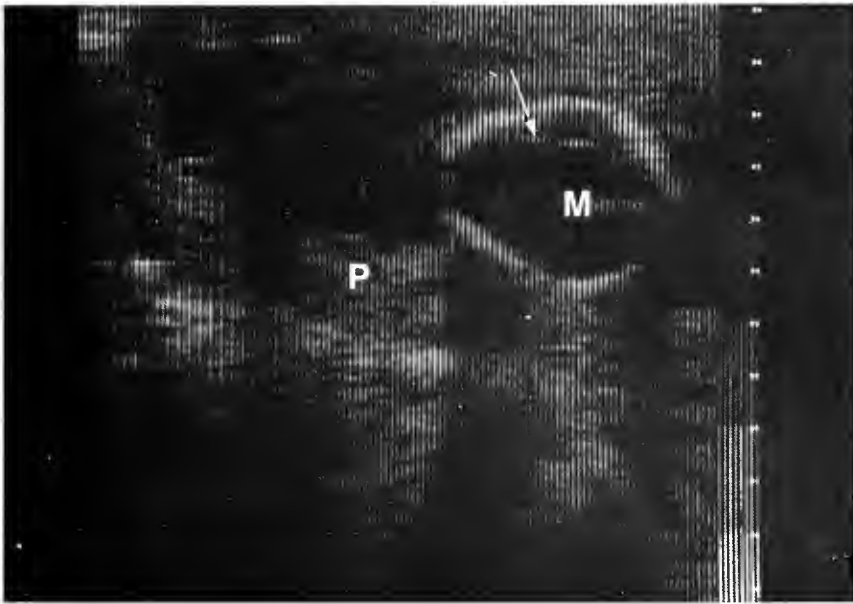


Figure 4: Dilated ventricles (arrow) of the case in Figure 3. (M = falx).

can be acquired through postgraduate courses and residency training. Using ultrasound to detect fetal anomalies requires training beyond that of most programs. We agree that diagnostic ultrasound should be categorized in two levels of skill designated Stage I and Stage II as proposed by the Society of Gynecologic and Obstetrical Ultrasonographers (SOGU) of the American Institute of Ultrasound in Medicine (AIUM).⁸

A Stage II sonographer should have available such ultrasound equip-

ment as a linear array, sector scanner, static B-scanner, proper recording equipment and a consultant who can do amniography if necessary to properly evaluate conditions associated with elevated MSAFP (Table IV). Based on our experience, about one-third of patients with elevated MSAFP and 80% of those with low MSAFP will have findings diagnosable by a Stage I ultrasonographer. The correction of gestational age, detection of multiple gestations, and diagnosis of fetal death, molar pregnancy and non-pregnancy are clearly within those capabilities. The two physicians performing advanced diagnostic ultrasound for this project detected six of seven anomalies. The one NTD missed by ultrasound and amniography could not be positively identified by amniography or static and linear array scans. This patient declined fetoscopy and elected to terminate the pregnancy because of suspicious ultrasound findings, two elevated MSAFP values, and positive amniotic fluid acetylcholinesterase and AFP. She was advised of the very rare possibility of a normal fetus with these findings. The fetus exhibited a flat, 1 cm sacral defect. A sector scanner was not available at that time but recent experience suggests that such a device may help in confirming the presence of such an NTD.

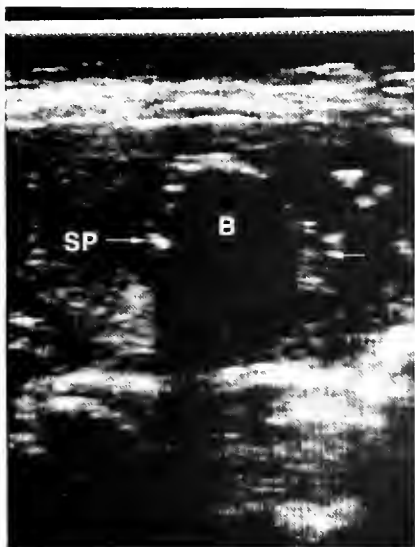


Figure 5: Protrusion of the pulsating heart (arrow) outside the fetal body (B) was noted on ultrasound. (SP = spine).



Figure 6: Fetus in Figure 5. No incision was made in the fetal body. All of the abdominal contents protrude through the defect.

Although the intent of a screening program is to identify pregnancies at high risk for NTD, the detection of erroneous gestational age, multiple gestation, fetal death, molar pregnancy, and non-pregnancy are additional positive benefits. This is particularly significant in that approximately one-third of the patients screened with ultrasound had one of these findings. By correction



Figure 7: Constriction (arrow) around the fetal fingers caused by an amniotic band.

TABLE III

Summary of Ultrasound Patients With Low MSAFP

	1979-1980		1980-1981		Total	Percent
	No.	Percent	No.	Percent		
Scanned	37	100.0	43	100.0	80	100.0
Dates less advanced	21	56.8	24	55.8	45	56.3
Fetal death	5	13.5	5	11.6	10	12.5
Dates correct	5	13.5	7	16.3	12	15.0
Not pregnant	0	0	6	14.0	6	7.5
Molar pregnancy	0	0	1	2.3	1	1.3
No follow-up	6	16.2	0	0	6	7.5

of gestational age and early prenatal detection of multiple gestations, the management of high risk patients is improved. One patient who elected to continue her pregnancy began early preparations for caring for a child with a NTD by talking to neurosurgeons and neonatologists. Delivery was planned to avoid injury to the sac and other complications.

It is not our intent to evaluate the pros and cons of a neural tube defect screening program. However, it seems likely that if screening were

expanded to include the entire state of North Carolina, many practicing physicians and ultrasound laboratories could screen at least one-third of the patients requiring such examination and refer the remainder to Stage II ultrasonographers. Prenatal screening for NTD by MSAFP appears to be useful in identifying these and other obstetrical complications.

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TABLE IV

Conditions Associated With Elevated MSAFP

1. Incorrect gestational age
2. Multiple gestation — either concordant or discordant for defects
3. Neural tube defects
4. Omphalocele/gastroschisis
5. Congenital nephrosis
6. Turner's Syndrome
7. Extrophy of a fetal organ
8. Fetal-maternal hemorrhage
9. Fetal death
10. Laboratory error

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TOBIAS SMOLLETT [1721-1771]

Had it been simply waking, he would have been obliged to them for the noise that disturbed him; for, in that case, he would have been relieved from the tortures of hell-fire, to which, in his dream, he fancied himself exposed. But this dreadful vision had been the result of that impression, which was made upon his brain by the intolerable anguish of his joints; so that, when he awaked, the pain instead of being allayed, was rather aggravated by a great acuteness of sensation.

The Adventures of Peregrine Pickle, Ch. 70

Primary Amenorrhea and Short Arm Deletion of the X Chromosome, 46,X,del(Xp). Report of Two Cases

Doyce G. Payne, M.D., and Jamil A. Fayez, M.D.

ABSTRACT Two patients with primary amenorrhea were evaluated clinically and cytogenetically and found to have short arm deletion of the X chromosome, 46,X,del(Xp). Both were observed to have stigmata suggesting chromosomal abnormalities at initial presentation. It is concluded that chromosomal evaluation is necessary for all women with primary amenorrhea to determine the precise etiology of the amenorrhea.

INTRODUCTION

THE advent of cytogenetics, radioimmunoassay, and improved methods of gonadal visualization has led to improved recognition of the varied causes of primary amenorrhea. Chromosomal abnormalities are found more often in these individuals than the 0.5% frequency of the population at large.¹ For the ovaries to be fully and normally developed, two XX chromosomes are needed. If one whole X chromosome or one of its arms (long or short) is missing, ovarian streaks develop. Simpson² gives an excellent synopsis of the abnormal chromosomal complements associated with gonadal dysgenesis, one of which is deletion of the X short arm. Two additional cases of this cause of primary amenorrhea are presented.

Case 1: A 22-year-old married female, gravida 0, had presented with primary amenorrhea at age 14. At that time she had been examined and told that she would begin men-

struating within a year or so. Repeat examination at age 17 was performed by a gynecologist and several lab tests were performed which the patient did not recall. She was advised then that she would never menstruate but was not told why. At age 19, she married and was begun on oral contraceptives to initiate monthly menstrual periods. When she was 22, the patient was referred for diagnosis and decision regarding therapy.

The patient's mother had menarche at age 14 and two sisters were already menstruating. Past history and social histories were noncontributory.

Physical examination revealed a healthy woman, weight 109 pounds, height 57 inches, and blood pressure 110/66 mm Hg. Breasts were adequately developed as were the pubic and axillary hair. No stigmata of Turner's syndrome were present except low set ears. Pelvic examination was within normal limits except no adnexa were appreciated.

Laboratory data included: serum follicle stimulating hormone (FSH), 97 mIU/ml (normal 5-40); serum luteinizing hormone (LH), 58 mIU/ml (normal 2-35); serum prolactin (PRL), 11 ng/ml (normal less than 25). Thyroid studies were all normal. Buccal

smear was approximately 20% positive for Barr bodies. Banding technique karyotype demonstrated one X chromosome with short arm deletion. No mosaicism was detected.

Laparoscopy revealed bilateral gonadal streaks; the pelvis was otherwise normal. Biopsies from both streaks showed fibrosis without primordial follicles.

Case 2: A 19-year-old single female, gravida 0, was referred with primary amenorrhea. The patient's general health has been good and the family history was unremarkable. Her mother and sister had begun menstruating without difficulty.

Physical examination revealed a healthy woman, weight 113 pounds, height 59 inches, and blood pressure 130/80 mm Hg. Breasts were small and underdeveloped and axillary hair was absent. A moderate growth of pubic hair was present in female distribution. No other stigmata of Turner's syndrome were present. Pelvic examination revealed underdeveloped external genitalia. The vagina was narrow and foreshortened with a palpable cervix and uterus. Ovaries were not felt.

Laboratory data revealed: serum follicle stimulating hormone (FSH),

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64 mIU/ml (normal 5-40); serum luteinizing hormone (LH), 70 mIU/ml (normal 2-35); serum prolactin (PRL), 8 ng/ml (normal less than 25). Thyroid function tests were normal. Maturation index revealed 0 superficial, 20% intermediate, and 80% parabasal cells. Buccal smear was 20% positive for Barr bodies. Banding technique karyotype demonstrated deletion of the short arm of the X chromosome at P11. No mosaicism was present. The patient's mother's karyotype was normal.

Laparoscopy revealed bilateral gonadal streaks with an otherwise normal pelvis. Biopsies from both streaks showed fibrosis without ova, follicles or corpora lutea. Patient's karyotype is shown in Figure 1.

DISCUSSION

The association between chromosomal abnormalities and gynecologic endocrinology is well known. Women with one X chromosome missing usually have stigmata of Turner's syndrome. Those women with long arm deletion of one X chromosome are tall and do not show evidence of Turner's syndrome. In a recent report,¹ 47% of a selected subfertile population demonstrated chromosomal abnor-

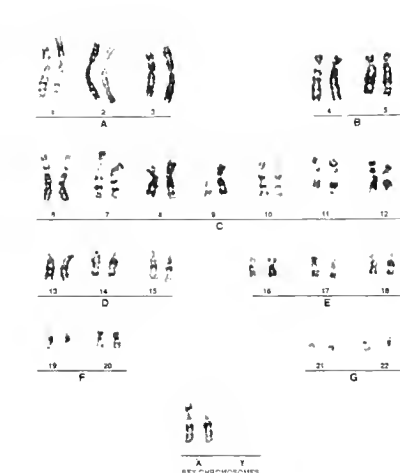


Fig. 1. Karyotype of Patient #2, 46,X,del(Xp). Note the difference in the X chromosome.

malities, including three not previously described and five various forms of X chromosome deletions.

Short arm deletions of an X chromosome, del(Xp), result in gonadal dysgenesis, short stature, and several somatic anomalies. Approximately 40 cases have been reported.² The most commonly reported abnormality has been 45,X,del(Xp) or 45,X/46,X,del(Xp). Frequently, mosaicism accompanies the deletion modifying the phenotypic expression of the chromosomal anomalies.

Although most 45,X,del(Xp) patients have gonadal dysgenesis, some menstruate or show breast development.³ Specifically, menstruation occurred in about 25% of 45,X,del(X) (P11) individuals (the most common deletion, the break point occurring near the centromere) and in all five individuals in whom the break point was more distal (Xp21 or Xp22).²

This suggests that functioning ovarian tissue is seen more often in individuals with a short arm deletion than in 45,X individuals. Also, primary amenorrhea occurs more commonly if both the proximal and terminal portions of the short arm are deleted rather than only the terminal portion (i.e., Xp21 ter).²

All reported 46,X,del(Xp) individuals have been shorter than 60 inches (152 cm). Other features of the Turner stigmata are often, but not always, present. This suggests that the short arm of the X chromosome contains not only an ovarian but also a statural determinant.

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JACOB BIGELOW [1786-1879]

Most men form an exaggerated estimate of the powers of medicine, founded on the common acceptance of the name, that medicine is the art of curing diseases. That this is a false definition is evident from the fact that many diseases are incurable, and that one such disease must at last happen to every living man. A far more just definition would be that medicine is the art of understanding diseases, and of curing or relieving them when possible. Under this acceptation our science would, at least, be exonerated from reproach, and would stand on a basis capable of supporting a reasonable and durable system for the amelioration of human maladies.

Nature in Disease, Ch. 2

Stroke Rehabilitation

Christian F. Siewers, M.D.

ABSTRACT Stroke is a major cause of disabling illness in this country and most physicians are aware of developments in prophylaxis and acute medical management. Few physicians, however, are aware of what can be done to help the patient with residual disability reach a more independent status and higher quality of life.

Most stroke patients, even when severely impaired, can with proper care and instruction reach a level of independence where minimal help will be required of their families in home care. Too often, these patients are relegated to nursing homes without proper consideration of the benefits of a rehabilitation program.

A review of 100 consecutive stroke patients admitted to the Southeastern Regional Rehabilitation Center confirms that a high percentage of those, even when severely disabled, can be taught self-care and mobility and be discharged to their homes.

THE Comprehensive Stroke Center Program of North Carolina has been in effect since 1978 when the National Institute of Neurological and Communicative Disorders and Stroke, National Institutes of Health, awarded a contract to the North Carolina Heart Association with the Department of Neurology of the Bowman Gray School of Medicine of Wake Forest University, the Department of Epidemiology of the University of North Carolina School of Public Health, the Center of Health Studies at Research Triangle Park, and the Southeastern Regional Rehabilitation Center in Fayetteville participating.

The model developed at Southeastern Regional Rehabilitation Center was implemented in 20 hospitals in 15 counties of Southeastern North Carolina.

Its main purpose was to learn more about stroke from detailed data collection, to educate the public, patients and physicians on risks from stroke, and to improve techniques for rehabilitation. Patients suffering stroke were to be evaluated at three-, six- and 12-month

intervals after the acute episode, and functional status, social support systems, and the use of health care services assessed. A stroke nurse coordinator was identified in each hospital to supervise and coordinate the work of the therapeutic team cooperating with the patient's physician. This facilitated referral to a Rehabilitation Center, often accelerating patient recovery.

Although the grant supporting the study expired in May of 1981, much has been learned. Data are available for analysis. This paper describes our experience at the Cape Fear Valley Hospital and in the Southeastern Regional Rehabilitation Center in Fayetteville which is now supporting the stroke nurse and continuing the program developed here.

PATIENTS AND RESULTS

I have surveyed 100 consecutive admissions for stroke to the rehabilitation center beginning in January, 1980.

Individuals suffering stroke more than six months before entry have been excluded from analysis. Such patients are more difficult to help because their patterns of dependency are unlikely to change.

The average time between the

onset of the stroke and admission was 27 days; the shortest was seven days; the longest, four months. Those with such severe disabilities that they need rehabilitation usually require three to four weeks in an acute hospital before they are medically stable and able to transfer to the Center.

The average length of stay was 32 days. The shortest was that of a patient who was transferred to another rehabilitation center out of the state after three days. The longest stay was 10 weeks.

Ages ranged from 34 to 99 years, a mean of 65.

Sixty-five were white and 35 were black.

Forty-eight had right-sided involvement and 52 left-sided. Thirty-two (60%) of the right hemiplegics had dysphasia; only one of the left-sided was so afflicted.

Medicare was the major source of payment in 60 instances; 22 were on Medicaid; 43 had private insurance.

Eighty-six of these patients were discharged to their homes. Eight went to nursing homes and six were sent back to the acute hospital for complications.

The Barthel Index was employed to measure functional ability for disabled patients.¹ This system gives

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numerical values to such activities as feeding, grooming, bowel and bladder control, transfers and ambulation. A score of 60 seems to be a point at which patients move from dependency to assisted independence. A score of less than 40 is usually incompatible with regaining independence in ambulation and such basic acts as feeding, grooming and sphincter control will be beyond reach.

The average apparent Barthel score on admission in our patients was 39; the lowest was 0. On discharge, the average score was 70. The increase in functional ability averaged 30 points.

The cost of rehabilitation is approximately \$160 a day, including room and intensive therapies, so that the average stay of a month will cost about \$5,000. Many of our patients would otherwise have been sent to nursing homes at the cost of \$1,000 to \$1,400 a month. Thus, the cost of a month in rehabilitation is equivalent to four to five months in a nursing home.

Most patients sent home will remain in the community from one to three years or more as the mean survival time after stroke increases. Follow-up has shown many patients will maintain their gains and remain in a home setting.

DISCUSSION

Most stroke patients, even when severely impaired, can recover to the point that they can reach partial independence and return home to their families. The time needed to help such patients after they are medically stable (although still disabled) is difficult to find in the atmosphere of a busy general hospital. Both stroke victims and their families need to be taught in many areas and over a reasonable time to understand the disability and how a meaningful, independent life can be achieved. Too often, stroke patients are discharged from the hospital before they have been taught adequately or reached a level of independence commensurate with their abilities. The recovery of a stroke patient does not depend on the healing of the vascular lesion alone.²

All stroke patients should be con-

sidered for rehabilitation and the objective of rehabilitation programs should be to maintain patients' medical stability while improving their functional status and helping them and their families adjust to any residual long term disability.

About 10% of stroke patients will be unimpaired and not need further rehabilitation. About 40% will have relatively mild residuals, needing only follow-up therapies. About 40%, however, will need relatively long term intensive therapies, best provided in a rehabilitation center. The other 10% will be so devastated that they will not be teachable and nursing care only will be indicated.³

Patients who cannot be helped are usually those who have a dense receptive aphasia which limits their comprehension and ability to be taught, for rehabilitation is essentially a teaching process. Usually they will also have a dense right hemiplegia. Patients with hemi-sensory losses and visual field cuts, as well as those with visual perceptual problems and poor balance, may be unable to achieve the independence needed for home care. Usually these patients have a left hemiplegia.

The facilities and therapies needed for a comprehensive rehabilitation program must include barrier-free areas with many disciplines available to work with the patient in a team approach. Usually two sessions daily in physical therapy, occupational therapy and speech therapy will be needed. Services of recreation therapists, rehabilitation home economists and psychologists will often be needed as well. The objectives of individualized treatment programs based on the patient's specific disabilities and the team approach advocated are similar in all North Carolina rehabilitation hospitals.

Rehabilitation nursing is a specialty in its own right. These nurses are aware that unlike the other hospital nurses their job is to stand back to allow patients to help themselves in every way possible rather than to pitch in to help directly. At times, this takes considerable self-control. Good rehabilitation nursing care is of prime importance in progressing a patient toward independence.

Efficiency in programs of bladder

and bowel training and skin care are essential. Persistent efforts here will eventually pay off so that many patients who enter with indwelling catheters and incontinent stools leave with satisfactory sphincter control.

Each patient is instructed in each of his medications, why these drugs are given, and what the most common side effects are; and families are also instructed so that therapeutic mistakes may be avoided.

Physical therapists work generally with patients aiming toward mobility, teaching them how to turn in bed, how to transfer to wheelchairs, how to walk using the parallel bars, and how to walk with an assistive device, such as a walker or cane. About 75% of our patients will become independently ambulatory. For those who cannot, the cause is usually not of leg weakness but visual perceptual problems, balance, or severe neglect due to their reduced field cut and hemi-sensory loss.

We are constantly amazed at the recovery of some patients who have been densely involved initially. For example, a patient may not show any voluntary motion of the lower extremity, but on being placed in a standing position, he will exhibit a reflex synergy sufficient enough for weight bearing. When involvement is severe, functional use of the lower extremity is much more likely to be regained than is recovery of the arm.

Occupational therapy is really a misnomer because occupational therapists in rehabilitation centers have little to do with teaching occupations. They work to strengthen and improve coordination of the involved upper extremity, which can progress through flaccidity, to increased primitive reflex patterns, and on to isolated active movement. Where the progression stops will determine the prognosis. For example, the longer the flaccidity persists in the upper extremity, the poorer the prognosis. Loss of sensation is important here; as with sensory loss along with motor involvement, the outlook is poor. About two-thirds of patients with moderate upper extremity involve-

ment will not regain function. The rest will improve to the point of being assistive with the involved extremity, but few return to being functional.⁴

In addition to accessing range of motion to prevent stiffness of the joints of the involved extremity, the most important work of occupational therapists is to teach patients one-handed techniques and the use of adaptive equipment for the remaining functional hand. There are many such devices to help the patients use one hand. A motivated patient can become completely independent in dressing, grooming, bathing and feeding, and in most simple recreational activities.

Occupational therapists can, with the help of speech therapists, assist many patients in improving swallowing and speech and in decreasing facial droop.

Speech therapists are most important in stroke rehabilitation care. They can determine just how much receptive involvement is present and how well a patient can comprehend. If receptive aphasia is predominant, the prognosis is much poorer than if just expressive aphasia is present.

We physicians are often unable to

discern the level of receptive involvement and comprehension of patients and must turn to experts in the field.

We often think of speech therapists as teaching patients to talk, but they do far more than this. If patients can comprehend and respond, the therapist can teach other forms of communication, such as gestures, sign language, picture boards, or alphabet boards. Expressive aphasics may require therapy for a year or more so that great patience is required for victim, family and therapist.

Recreational therapists, appreciating the limitations of the involved upper extremity of the stroke patient, can pattern their activities to reinforce the exercise programs of other therapists. This helps to improve strength and coordination. Also, they are trained to combat boredom, so dangerous to the stroke victim, and to encourage the reentry of their patients into a productive existence. This they do through planning social and individual exercises which will restore the patient's self-confidence and make it easier for them to get along with others. Many stroke patients must re-estab-

lish their places in their communities from which their illness has deposited them. Because of their limitations, they will require support in playing a new and somewhat restricted role. Here the recreational therapist can be most helpful and resourceful.

The housewife who has suffered a stroke may feel lost in her own kitchen, uncertain how to handle her utensils and machines. A rehabilitation home economist can be very helpful in evaluating such a patient's capacity and in teaching new ways of doing things. In such a way, a sense of personal mastery can often be regained and her house can again become her home.

Acknowledgment

I wish to thank Sandra Whittemore, Denise McKee, and Cynthia Halstead of the Southeastern Regional Rehabilitation Center and Stan Hall of the North Carolina Heart Association for their help in the preparation of this article.

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SIR ASTLEY PASTON COOPER [1768-1841]

Nothing is known in our profession by guess; and I do not believe, that from the first dawn of medical science to the present moment, a single correct idea has ever emanated from conjecture: it is right therefore, that those who are studying their profession should be aware that there is no short road to knowledge; and that observations on the diseased living, examination of the dead, and experiments upon living animals, are the only sources of true knowledge; and that inductions from these are the sole bases of legitimate theory.

A Treatise on Dislocations and Fractures of the Joints

Toxic Encounters of the Dangerous Kind

THE "BLUE" PEOPLE WITH "CHOCOLATE" BLOOD — METHEMOGLOBINEMIA

This is not a science fiction piece, so read on. The title refers to a poisoning that you can expect to see in your practice more than once in your lifetime if you remember what to look for. There are literally hundreds of compounds that, when ingested, can cause a person to become markedly cyanotic with chocolate colored blood — i.e., methemoglobinemia. This condition occurs when hemoglobin is oxidized at a rate that exceeds the reducing capacity of red blood cells. Normally, the iron in hemoglobin is in the ferrous (Fe^{++}) state and carries oxygen very well; in methemoglobinemia the iron in hemoglobin is in the ferric state (Fe^{+++}) and does not carry oxygen well. 1.5 - 2.0 g/dl of methemoglobin is enough to produce cyanosis.

Some of the products that can cause this condition are well known to us, others not so and too many are available over-the-counter. One of the largest class of offenders is the nitrate/nitrite group which includes amyl nitrite, butyl nitrite, foods containing nitrates, foods adulterated with nitrates, and nitrates in water. Butyl and isobutyl nitrite are of special interest as they are legal over-the-counter drugs that can be abused. These products are sold as perfumes, liquid incense and room deodorizers — in boutiques, "head shops," and record stores. With trade names such as Locker Room, Rush, Aroma of Men, etc., they are used and abused as aphrodisiacs, stimulants and psychedelic agents. They can cause methemoglobinemia if ingested.

Other chemicals that can turn your blood "brown" include the sulfonamides, aniline dye derivatives, (e.g., marking ink, shoe dye), phenacetin, acetanilid, pyridium and benzocaine containing products. Benzocaine is a very ubiquitous agent in many over-the-counter preparations, e.g., teething lotions, suppositories for anal fissures, hemorrhoids, locally applied ointments/creams for dermal pain relief, particularly.

When should you suspect the presence

of methemoglobinemia? One of the key clinical features is *cyanosis* that does not respond to oxygen therapy. The diagnosis can be suspected by the characteristic *chocolate brown color* of a freshly obtained blood sample. This blood sample does not become bright red when shaken in the presence of room air or when oxygen is bubbled through it. A good bedside test in the emergency room involves placing one drop of your blood (or your designee) and one drop of the patient's blood side by side on a piece of filter paper. If the patient's blood is more chocolate than yours (or your designee), then the patient probably has greater than 15% of his or her blood as methemoglobinemia. Spectrophotometric analysis of the concentration of methemoglobin is required for absolute diagnosis.

Generally, concentrations of 10%-25% methemoglobin cause cyanosis without other apparent harmful effects. Cardiovascular mechanisms for increasing the oxygen supply to the tissues are called into action at methemoglobin levels of 40% or above. At this level, in addition to cyanosis, the patient may complain of dizziness, fatigue, headache and exertional dyspnea. At 60% concentration big trouble may ensue — extreme lethargy, bradycardia, dyspnea, paralysis, unconsciousness and seizures. The lethal concentration is probably 70% and above. Failure of an oxygen supply necessary for sustaining life certainly could be expected at a methemoglobin concentration of 85%.

The first step in treatment is to remove any chemical or drug that you suspect could have initiated the methemoglobinemia. Patients with mild degrees of this poisoning will recover spontaneously because of the action of the enzyme methemoglobin reductase. (Almost all of us have a good supply of this enzyme.) If the methemoglobin level is 30%-40% and/or there is stupor, respiratory distress or angina, definitive treatment should be instituted. (Some suggest withholding specific therapy until the methemoglobin level is 50%-60%.) The definitive management of significant methemoglobinemia includes intravenous administra-

tion of 1% *methylene blue*. The dose is 1-2 mg/kg given slowly over a 5-minute period. This drug will correct the methemoglobinemia within 30-60 minutes. Oxygen should be given as well. Rarely is a second dose of methylene blue required. In extreme examples of this condition an exchange transfusion may be required. In the past, ascorbic acid has been used in patients with acute methemoglobinemia; however, it is not very efficient and cannot be recommended.

Methemoglobinemia is a fascinating entity and the literature contains many articles about this topic, but my all-time favorite reference is in the February 1977 issue of *Pediatrics*.¹ The article describes a pair of 4-month-old twins who were given "Spirits of Nitre" orally to relieve "fussiness." Both children became methemoglobinemic; one died. This substance (4% ethyl nitrite in 70% alcohol) has been in use in this country since before the American Revolution. Since 1778 it has

been manufactured here, when domestic pharmaceutical manufacture began in the young United States. Spirits of Nitre was an over-the-counter nostrum *produced continuously* here until 1980 when the FDA recalled it. All of the pharmacists that I questioned wished it was still available because of the volume of requests.

The next time you see a cyanotic patient not responding to oxygen, look at a sample of the patient's blood; if it looks chocolate it's not from eating too many Hershey bars.

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and Chairman, Committee on
Accidents and Poison Prevention
N.C. Chapter of the American
Academy of Pediatrics

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Editorials

A MATTER OF DEGREE: FREEDOM AND REGULATION

The AMA Council on Long Range Planning and Development has devoted considerable time and effort to identifying significant but currently obscure trends which can be expected to assume increasing importance in 1980 and beyond. One seems obvious — that competition between physicians may be keener, particularly if we really do have too many medical students currently enrolled in our medical schools. We can also expect more competition from non-medical and paramedical health providers, more pressure on our licensing bodies and greater efforts to cut costs.

From California has come a rather unusual proposal: deregulation of the medical profession by omission of enforcement of laws against unauthorized practitioners. How this would affect litigation is anyone's guess. Presumably if laws were not enforced, unlicensed practitioners could hardly be at risk. Yet the licensed physician would still be something of a resource to be exploited. This suggests that physicians might counter by declining to be licensed, practicing themselves without the blessings of the state. The licensed physician would retain exclusive use of the terms "physician," "medical doctor," and "M.D." But M.D. simply stands for a medical doctorate conferred before licensure.

Such action is proposed as a means of eliminating the "monopoly" in the provision of health services now assumed to be held by medical doctors. Strangely, this proposal emanates from California's Board of Medical Quality Assurance (BMQA). The executive director of BMQA urges the medical profession not to get excited but does assert that the economic justifications for the change "are quite substantial." A blessed assurance indeed!

There is an air of the unreal about such arguments for deregulation, one of which assumes that there is a free market in health care which should be so efficiently self-adjusting that abuses would be prevented by a mysterious natural prophylaxis. This reckons without the infinite vagaries of human personality and without looking through the eye to the past we call history. Several centuries ago Gresham's law — bad money drives out good — was propounded and has been confirmed many times over. The law might apply to medicine as well.

One of the favorite phrases of today's pundit is "the cutting edge," which peels away the superfluities of our daily existence leaving the truth bare, obvious and easily applied. Perhaps we need to make a favorite of another expression used by statisticians, "degrees of

freedom." As the exercise of totalitarian power clearly shows and as the Iranian anarchy also demonstrates, absolutisms of right and left regulate in the name of deregulation and deny any degree of freedom.

California's motto "Eureka" means "I have found it." The Golden State of course does not hold a monopoly on the use of the phrase. The hazard lies then not in the expression but in its application and what "it" turns out to be. If "it" attracts only true believers, not susceptible to analysis, reproducibility and confirmation, freedom could turn out to be the equality of slavery.

Where all things are equally valued, nothing is valuable.

J.H.F.

"TRUST ME"

One of the classical television commercials, with infinite variations, stars a just plain Bill, somebody you can trust, telling you what to buy. In today's editorial he runs a drug store in a small town, so small that it has been undiscovered by the larger chains. So he has time to know each customer personally and to prosper, although he never has more than one customer in his store. Why is it necessary to recreate yesterday to sell tomorrow?

What about tomorrow when it will be necessary to recreate today? We are told that electronic shopping is on the way, that it is the way of the future. At home we will sit at our computer terminals or cable TVs, punching through our orders without touching the merchandise. Deliveries will come directly from the warehouses which will probably move into our shopping centers vacated of department stores, shoe shops and boutiques by the new catalogue culture.

This revolution in provision and consumption will certainly affect medicine. The Food and Drug Administration will insist that consumers have instant package inserts available to check their prescriptions so the *Physicians' Desk Reference* will almost certainly be made available on the computer. Comparison shopping will be obligatory so battle between generics and trademarks will be joined. Chain drug stores of tomorrow struggling to get a piece of the patient care action will offer educational programs on cable television. The pharmacist of yesterday, compounding and exponent of Dr. Caldwell's Syrup of Figs and Fletcher's Castoria ("Children love it, babies cry for it.") will probably be exiled to memory.

Computer programmers will be challenged by drug size, color and shape. Taste once so important in the days of compounding will have to be converted to

promise. Folk beliefs will have to be appealed to — a sort of partnership between computer and consumer established for greater self-therapeutic reward. Meanwhile public TV will counter-program its concerns about drug safety, effectiveness and cost. The AMA may have to enter the marketplace offering as a public service some instruction about quality control in drug manufacture, bioavailability, volumes of drug distribution, drug half-lives and receptor sites.

The major problems for industry will be the establishing and maintenance of reputation, the "trust-me" aspect, and overcoming difficulties in being innovative in advertising laxatives, analgesics, vitamins and preparations for hemorrhoids and female hygiene. What sort of displays will be devised to take the place of the counter where these staples currently reign? How will competition be assured and quality maintained? It sounds like a showdown between the Federal Trade Commission and the Food and Drug Administration.

Does all this sound visionary, the prattling of an eccentric? It may well be but there are hints from other fields. The *New Yorker*¹ reports that the fashion industry is already figuring out how to put an L.L. Bean or a Bergdorf-Goodman catalogue on a video-disk and is inviting demographic experts to help with regionalization and stratification of appeal. What for example are the expectations of lower-income residents of California contrasted to the poor Texan in all income brackets?

Medicine has been fashionable for some time as the proportion of the gross national product spent on health care testifies. What actually are our medical shopping habits today? How will electronic shopping change this and affect our spending? If we don't know, how can we find out? Tune in tomorrow!

J.H.F.

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From The Desk of The Managing Editor

CHEMICAL QUESTIONS

The question of whether the cancer rate is decreasing has been a continuing controversy in the field of public health. For years many experts argued that, discounting cancers caused by smoking, the rate was decreasing noticeably. But in 1980 the National Cancer Institute published evidence demonstrating a rise in the rate during the 1970s. The data may have reversed the general opinion. In 1979 the American Cancer Society's "Cancer Facts and Figures" claimed that the cancer rate had decreased slightly in the past 25 years, whereas, in 1980 the publication stated that, while the rate had decreased slightly from 1947 to 1970, it had increased between 5 and 10 percent since 1970.

Although interpretation of these data is not without problems, the implications of an increase in the rate of cancer are wide-ranging. Public health, governmental policy, and the economy are all affected inasmuch as some attribute this increase to exposure to chemicals. The timing is critical. It was not until after World War II that industry in the United States began to produce large quantities of radioactive substances and synthetic chemicals. Most cancers have a latency period of 20 to 30 years; thus, with industry continuing to grow, one must be concerned that the cancer rate will too.

The health care community faces many questions concerning health effects from chemical wastes. The problem is compounded by the difficulties in the identification and monitoring of hazardous substances (See *Science* January 29, 1982). However, physicians are looked to for answers about health effects once the potential for human exposure is established. But just what are the relevant questions?

Is it toxic? Once identified, the chemicals may or

may not pose a health threat. Toxicity data on the chemicals are necessary to answer this question.

Are toxicity data available, and, if so, where can they be obtained? Data continue to be collected by various groups, including the National Toxicology Program, but much more needs to be done. Of the nearly 300 chemicals identified at Love Canal, toxicology data were available on barely half. Efforts to coordinate information collection in a central data bank system are beginning with help from the National Library of Medicine.

What substances can be measured in tissues? What is the level of exposure? Compounding the problem of identifying the level of exposure is the lack of background data. In the aftermath of Love Canal and other such experiences, measurements being taken to determine "background" levels of chemicals have shown that most Americans have a body burden of diverse chemicals from the environment. Thus, in order to determine an increase in exposure, good data on background must be available. Many questions remain concerning what substances can be measured in tissues and how.

Do the chemicals cause any specific illness? Certainly, all of these questions address the need for information to protect the public health. The health effects from chemical wastes are rarely specific, but they are often cancer, or effects on reproductive performance, on the unborn or newborn infant.

Answering these questions is not an easy task. As the cancer debate shows, identifying a health threat is an on-going — some say never-ending — process. And complicating the matter are the political and economic aspects of the process.

(Coming next: What is North Carolina Doing About Hazardous Waste?)

A.A.H.

National Institutes of Health

CONSENSUS DEVELOPMENT CONFERENCE STATEMENT: THE DIAGNOSIS AND TREATMENT OF REYE'S SYNDROME

A Consensus Development Conference was held at the National Institutes of Health (NIH) on March 2, 3, and 4, 1981, to address issues on the diagnostic criteria and treatment of Reye's syndrome.

At NIH, consensus development conferences bring together investigators in the biomedical sciences, practicing physicians, consumers, and advocate groups to provide a scientific assessment of technologies, including drugs, devices, and procedures, and to seek agreement on their safety and effectiveness.

On the first two days of the meeting, a consensus development panel and members of the audience reacted to evidence presented on the following questions:

- What are the key signs, symptoms, and laboratory findings of Reye's syndrome?
- What is the evidence for the effectiveness of the various treatments of Reye's syndrome?
- What are the clinical and experimental studies needed to advance our ability to diagnose and treat Reye's syndrome?

The members of the panel represented the disciplines involved in the diagnosis and treatment of those with Reye's syndrome. Panelists were nominated by seven specialty associations: the American Academy of Neurology, the American Academy of Pediatrics, the American Association of Neurological Surgeons, the American Society of Anesthesiologists, the American Academy of Family Physicians, the Child Neurology Society, and the American Nurses Association. This summary is the result of the panel's deliberations.

Members of the Consensus Development Panel were: Philip R. Dodge, M.D., Chairman; Stuart B. Brown, M.D.; Walton L. Ector, M.D.; Peggy C. Ferry, M.D.; Stuart C. Hartz, Sc.D.; Earl C. Hutchins, M.D.; James P. Keating, M.D.; David G. McLone, M.D., Ph.D.; Georges Peter, M.D.; Mark C. Rogers, M.D.; Theodore Safford, Jr., M.D.; James F. Schwartz, M.D.; Elise Wear, M.S., R.N.

Reye's syndrome is a life-threatening illness that affects children of all ages, with a peak incidence between 5 and 15 years; on rare occasions it has been reported in adults. Although Reye's syndrome (encephalopathy with fatty degeneration of viscera) has

been extensively investigated since the classic description of the disorder by Reye, Morgan, and Baral in 1963,* the etiology and pathogenesis of this disease process remain obscure. The subcellular insult appears to affect mitochondria in multiple organ systems. Since prompt treatment may provide a better chance for complete recovery, early diagnosis is important.

Dissemination of information is recommended. This includes information on the early symptoms of Reye's syndrome, diagnostic criteria, and essential aspects of therapy. Such information should be distributed to parents, physicians, and nurses to facilitate early recognition, diagnosis, and treatment.

1. What are the key symptoms?

Reye's syndrome should be suspected in a child who, during or while recovering from a viral illness (most commonly chicken pox or influenza), unexpectedly develops repetitive vomiting and altered behavior such as lethargy, confusion, irritability, or aggressiveness. Neither fever nor jaundice is usually present. In children under one year of age, respiratory disturbances such as hyperventilation or apneic episodes may be prominent. In this special group (<1 year old) seizures occur more frequently than in older patients. All children with the above pattern of illness should receive prompt medical attention.

2. What are the laboratory findings in Reye's Syndrome?

Helpful laboratory tests include the level of transaminases in serum, ammonia concentration in blood, and prothrombin activity. The activity of serum transaminases is at least three times upper normal limits, prothrombin time is usually prolonged, and blood ammonia concentration is commonly elevated. Jaundice is conspicuously absent and serum bilirubin is rarely elevated. The concentration of glucose in blood is usually normal, especially in children 4 years of age and older. The cerebrospinal fluid (CSF) generally contains fewer than 8 cells per mm³ and normal protein and glucose concentrations, except when there is concomitant hypoglycemia. Other recommended laboratory tests include determination of the concentration of glucose, calcium, and phosphorus in blood and of serum amylase activity. Serum should be analyzed for salicylate and acetaminophen contents.

*For a description of the disorder in North Carolina in 1963, see: Johnson, GM, Scurlett, TD, Carroll, NB: A study of sixteen fatal cases of encephalitis-like disease in North Carolina children. *North Carolina Medical Journal* 24, 10:464-473, 1963.

3. Where should a patient be treated?

It is most important that primary care practitioners be highly aware of Reye's syndrome and perform appropriate laboratory investigations promptly. Children with a history and laboratory findings suggestive of Reye's syndrome should be hospitalized for careful observation and receive glucose by intravenous infusion. Patients with Stage II symptoms or worse (Table 1) should be cared for in a pediatric intensive care unit by a multidisciplinary team according to an established protocol, when available.

If the diagnosis of Reye's syndrome is made by a primary care physician, that physician should consult with colleagues in a pediatric intensive care center and discuss transfer. The transport team should be prepared to provide support for vital functions.

4. What are the currently used rating or classifying systems for measuring the severity of clinical symptoms? How useful are they?

A variety of staging systems based upon neurologic findings have proved useful in assessing the severity of the illness, monitoring the effect of therapy, and predicting ultimate outcome. The multiplicity of staging systems, however, has been confusing for clinicians and researchers alike.

5. Should a uniform system be recommended for general use?

The panel reviewed a number of proposed staging systems and recommends the one offered in Table 1 for use in management and study of Reye's syndrome. Patients with high concentrations of ammonia in blood early in the course of disease appear to have a less favorable prognosis.

6. When is a liver biopsy needed?

The diagnosis of Reye's syndrome can be made in most patients without a liver biopsy, a procedure not to be undertaken lightly in an uncooperative, critically ill child with defective coagulation. The results may confuse rather than inform unless the tissue is processed and interpreted by personnel with special knowledge of the illness.

Nevertheless, a carefully planned biopsy, after correction of the coagulation abnormality, can provide

important information in certain specific situations. Biopsy should be considered in: (1) infants, (2) children with recurrent episodes, (3) familial cases, and (4) non-epidemic (sporadic) cases without antecedent infection or vomiting. Biopsy also increases the certainty of diagnosis and is important if a new and potentially dangerous therapeutic regimen is planned.

7. What other conditions may present with similar symptoms?

There is a lengthening list of illnesses that may be temporarily misidentified as Reye's syndrome. We now recognize that transaminase elevations may occur in children with varicella without Reye's syndrome and in shock or hypoxia due to a wide variety of illnesses. Intramuscular injections (especially of a commonly used antiemetic, chlorpromazine) and protracted seizures may increase levels of transaminases in serum in a variety of diseases which affect the central nervous system. Methyl bromide, hypoglycin (senecio alkaloid), isopropyl alcohol, folk remedies (pyrrolizidine and margosa oil), aflatoxin, lead, and some drugs (e.g., aspirin, acetaminophen, and valproic acid) may produce disturbances of consciousness and elevation of serum transaminases.

When confronted by familial or recurrent occurrences of Reye-like illness, the physician should consider inborn errors of metabolism, especially systemic carnitine deficiency, glutaric acidemia, ornithine transcarbamylase deficiency, or hereditary fructose intolerance.

8. What special diagnostic tests are needed?

Computerized transaxial (CT) brain scanning is neither necessary nor indicated for diagnosing Reye's syndrome unless there is clinical suspicion of another disease, e.g., subdural hematoma, brain abscess, etc. Thus, CT scanning is not an integral part of diagnostic evaluation. If, however, the test is done early in the course of illness, it will show a normal pattern or evidence of diffuse brain edema, with no displacement of ventricles or localized areas of enhancement.

The usefulness of electroencephalography (EEG) depends on the availability of appropriate equipment and individuals skilled in EEG interpretation. In general, the EEG has not proved to be helpful in following patients, determining prognosis, or altering treatment.

TABLE 1.—Staging of Reye's Syndrome

	I	II	III	IV	V
Level of consciousness	Lethargy; follows verbal commands	Comative/stupor; verbalizes inappropriately	Coma	Coma	Coma
Posture	Normal	Normal	Decorticate	Decerebrate	Flaccid
Response to pain	Purposeful	Purposeful/nonpurposeful	Decorticate	Decerebrate	None
Pupillary reaction	Brisk	Sluggish	Sluggish	Sluggish	None
Oculocephalic reflex (Doll's eyes)	Normal	Conjugate deviation	Conjugate deviation	Inconsistent or absent	None

PRACTICE MANAGEMENT

Appointment Scheduling

From the American Medical Association
Department of Practice Management

Wouldn't you be perturbed if you had a 9 am appointment with an attorney and then you weren't seen until 10:30? Of course you would. Your time is valuable.

Yet many doctors seem unaware that they are treating their patients in the same cavalier manner--making them wait for long periods of time with nary a hint of explanation or apology. Studies consistently show that time spent waiting in a doctor's office ranks second only to health care costs as patients' biggest health-related complaint. A patient's time, after all, is just as valuable to him or her as your time is to you.

Foul-ups in appointment scheduling affect your practice in more direct ways as well. Bad scheduling inevitably results in long work days, missed lunches, and decreased productivity for both you and your staff. Over time, the combination of patient dissatisfaction and staff fatigue which arises from a bad scheduling system can cause your practice irreparable harm. The plain fact is that in today's competitive physician market neither patient nor employee has to endure such inefficiency if he or she chooses not to.

What is especially unfortunate about a faulty appointment schedule is that much of the irritation can be eliminated. There will always be some things which throw the best of schedules into disarray, but the overwhelming conclusion drawn by the American Medical Association's Department of Practice Management, after surveying doctors and medical assistants each year, is that most of the every day occurrences which play havoc with an appointment schedule can be anticipated and planned for and their effects minimized.

Here are some common-sense things which you, the doctor, can do to improve the appointment scheduling in your office:

- Customize your appointment books. This takes a little time and effort, but it's well worth it. First, record the average time it takes you to see a patient for each of your most common procedures. Record also the average number of "time stealers"--work-ins, walk-ins, and telephone calls--which you usually encounter for each day of the week. Then have your appointment books custom printed to incorporate these findings into your daily schedule. You will then be allotting

to each patient the approximate amount of time it actually takes you to treat an "average" patient. Time must also be set aside for your anticipated walk-ins and telephone calls, or you will inevitably fall behind. These "interruptions" vary from day to day, so you should have a customized schedule for each day of the week. Monday is usually the most hectic.

- Schedule realistically. Once you know how long it takes you to see patients, make call-backs, etc., allow yourself sufficient time to meet these obligations. Doctors who consistently overbook their schedules thinking that this will increase their productivity are only fooling themselves.
- Try cluster scheduling. Scheduling patients with similar problems or needs back to back--or cluster scheduling--allows both doctor and assistants to render care to these patients by repeating the same procedures. Studies have shown that this can maximize the quality of time spent with each patient and improve overall appointment efficiency.
- Listen to your medical assistants. They're the ones on the "firing line" every day juggling two very different sets of expectations--yours and your patient's. They are your best source of suggestions for what might improve scheduling.
- Don't make appointments behind your assistant's back. Get into the habit of asking your patients to make appointments through your office. Such a small change in your procedures may dramatically decrease the number of walk-in patients.
- Don't reward bad behavior. Every time you see a walk-in ahead of your scheduled patients, or see an early arrival before his or her scheduled appointment time, you are educating your patients to ignore your office policies regarding appointments. Establish such policies carefully, then stick by them and expect your patients to stick by them.
- Be conscious of your own time habits. Try to arrive for all scheduled appointments on time. If you know that morning hospital rounds will take until 9:30 am, don't schedule patients before 9:30 am. Let your actions show that you respect the value of your patients' time.
- Communicate with your patients about emergencies. Patients understand that the most carefully planned schedule may sometimes be disrupted by an emergency. Most patients understand the inconvenience caused by this, realizing that they too may some day need your emergency care. But patients do resent waiting for long periods of time with no explanation. If you know you are going to be significantly delayed, let your assistant know so that she can inform your patients and give those waiting a chance to re-schedule.

9. What have been the indications for intracranial pressure monitoring? What devices are available? What are the goals in reducing intracranial pressure and when can monitoring be stopped?

Since 1975, several reports have suggested that invasive monitoring of intracranial pressure may be useful in the management of children with Reye's syndrome. The devices in use can provide continuous measurement of pressure in the epidural, subarachnoid, or ventricular spaces. The difficulties inherent in assessing the usefulness of this procedure, employed to monitor rather than to treat, have produced conflicting opinions. Some physicians believe it improves their ability to manage patients; others do not. Mortality and morbidity directly attributable to monitoring devices appear to be low in the medical centers where they are used frequently. Data are inconclusive regarding criteria for discontinuation of such monitoring.

10. What are appropriate therapies in the noncomatose patient?

Therapy for Stage I patients includes administration of fluid containing dextrose. While there are no studies documenting that glucose administration in excess of that provided by a 5 percent solution at maintenance rate is definitely beneficial, a number of considerations have prompted many clinicians to administer 10 percent solutions to these mildly affected children.

If neurologic deterioration occurs, the rate of fluid administration must be adjusted to maintain critical organ perfusion. Episodes of hypotension have been reported with maintenance rate of fluid administration, osmotic diuresis following.

For many reasons, hemodynamic monitoring is important. Arterial catheters permit continuous blood pressure measurement and frequent arterial blood-gas sampling. Central venous catheters may provide useful data concerning blood volume and cardiac function, while pulmonary artery catheters (permitting measurement of cardiac output) may be helpful in some seriously ill children. While central venous catheters may be preferable in patients with normal cardiopulmonary function, the management of complicating cardiac dysfunction due to disease or drugs may make more complete monitoring necessary.

Intubation of patients with Reye's syndrome has received general acceptance, although there is disagreement as to criteria for intubation. There is agreement that intubation should be elective (i.e., prior to respiratory failure or cardiac arrest). It is most often prompted by approaching toward coma and intravenous succinylcholine and barbiturate are employed to facilitate the process.

11. What are the important metabolic derangements and are they amenable to treatment?

There are many metabolic derangements in Reye's syndrome, including hypoglycemia, hyperammonemia, hyperlactatemia, short chain fatty

acidemia, hypophosphatemia, hyperaminoacidemia, azotemia, hyperuricemia, elevations of several hormones, and a mixed acid-base disorder. The relationship of the finding to the severity or treatment of the disease remains speculative. Although the degree of metabolic perturbation roughly parallels the severity of clinical illness, efforts (dialysis, amino acid infusion, phosphate and insulin infusions) to correct specific metabolic abnormalities have not clearly altered outcome.

Administration of vitamin K is generally accepted, although it is recognized that it is unlikely to fully correct clotting abnormalities. If significant bleeding occurs, exchange transfusion with fresh blood or administration of fresh frozen plasma may be helpful.

12. What are the therapies for increased intracranial pressure?

While the encephalopathy of Reye's syndrome is not always associated with increased intracranial pressure, such elevations frequently complicate the course of patients in coma. In lieu of specific treatment of the encephalopathy, much effort has been directed to the control of increased intracranial pressure. Measures commonly employed include osmotherapy and spontaneous or controlled hyperventilation. Experimental measures include high-dose barbiturates, corticosteroids, CSF withdrawal, and decompressive craniotomy. Use of newer techniques of monitoring and treating cerebral edema should be reserved for centers experienced in the diagnosis and management of children with severe neurologic disorders. To date, groups employing these experimental measures have failed to demonstrate better survival rates than those providing usual intensive supportive care.

13. What therapies are directed at removal of presumed toxins?

Exchange transfusion, dialysis, total body "wash-out," charcoal hemoperfusion, and plasmapheresis have all been suggested as potentially helpful by removing an unidentified toxic substance from patients with Reye's syndrome. There is no evidence that the use of these techniques improves outcome.

14. What are the residual findings?

Complete recovery may be expected in the majority of patients who survive the acute illness. However, some children who experience coma may suffer brain damage resulting in developmental delay, motor impairment, or mental retardation. Normal functioning in school may be delayed for some weeks. Children may be able to do the prescribed school work, but at a slower rate. Sometimes easy distraction, inattention, and memory problems occur.

Anxiety and apprehension associated with fear of bodily harm and death are frequently encountered in these children during hospitalization and after discharge. Such fears can be helped by gentle parental support. Overprotectiveness of the child by the par-

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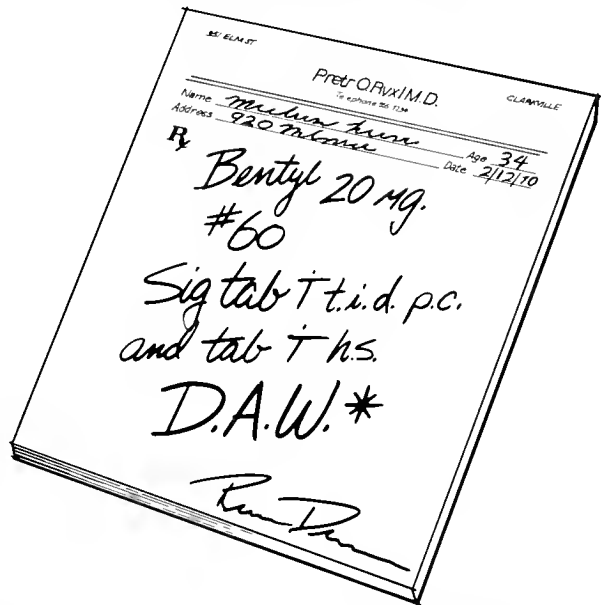


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*This drug has been classified "probably" effective for this indication.

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Reference:

1. Chowdhury AR and Lorber SH: Personal communication, 1980.

(See Product Information on the next page before prescribing Bentyl.)

Although the dose of Bentyl used to show pharmacologic effect was 50 mg, which is a higher single dose than that permitted in the labeling, the dose was considered justified, since the recommended daily dose of injectable Bentyl is 20 mg (2 ml) every 4 to 6 hours. Thus, in 8 hours, a patient could receive a total of 60 mg I.M. and, at that time, as a result of the sustained plasma levels from the 20 mg injections at 0 and 4 hours, might show an even higher plasma level than occurs after a single 50 mg dose. Presumably, the same pharmacologic effect would follow. These observations do not constitute evidence of efficacy.

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Brief Summary

INDICATIONS

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For use in the treatment of infant colic (syrup).

Final classification of the less-than-effective indications requires further investigation.

CONTRAINDICATIONS: Obstructive uropathy (for example, bladder neck obstruction due to prostatic hypertrophy); obstructive disease of the gastrointestinal tract (as in achalasia, pyloroduodenal stenosis); paralytic ileus, intestinal atony of the elderly or debilitated patient, unstable cardiovascular status in acute hemorrhage; severe ulcerative colitis; toxic megacolon complicating ulcerative colitis; myasthenia gravis

WARNINGS: In the presence of a high environmental temperature, heat prostration can occur with drug use (fever and heat stroke due to decreased sweating). Diarrhea may be an early symptom of incomplete intestinal obstruction, especially in patients with ileostomy or colostomy. In this instance treatment with this drug would be inappropriate and possibly harmful. Bentyl may produce drowsiness or blurred vision. In this event, the patient should be warned not to engage in activities requiring mental alertness such as operating a motor vehicle or other machinery or perform hazardous work while taking this drug. There are rare reports of infants, 6 weeks of age and under, administered dicyclomine hydrochloride syrup, who have evidenced respiratory symptoms (breathing difficulty, shortness of breath, breathlessness, respiratory collapse, apnea), as well as seizures, syncope, asphyxia, pulse rate fluctuations, muscular hypotonia, and coma. The above symptoms have occurred within minutes of ingestion and lasted 20 to 30 minutes. The timing and nature of the reactions suggest that they were a consequence of local irritation and/or aspiration rather than a direct pharmacologic effect. No known deaths or permanent adverse effects have been reported. Bentyl syrup should be used with caution in this age group.

PRECAUTIONS: Although studies have failed to demonstrate adverse effects of dicyclomine hydrochloride in glaucoma or in patients with prostatic hypertrophy, it should be prescribed with caution in patients known to have or suspected of having glaucoma or prostatic hypertrophy.

Use with caution in patients with:

Autonomic neuropathy. Hepatic or renal disease. Ulcerative colitis. Large doses may suppress intestinal motility to the point of producing a paralytic ileus and the use of this drug may precipitate or aggravate the serious complication of toxic megacolon.

Hyperthyroidism, coronary heart disease, congestive heart failure, cardiac arrhythmias, and hypertension.

Hiatal hernia associated with reflux esophagitis since anticholinergic drugs may aggravate this condition.

Do not rely on the use of the drug in the presence of complication of biliary tract disease. Investigate any tachycardia before giving anticholinergic (atropine-like) drugs since they may increase the heart rate. With overdosage, a curare-like action may occur.

ADVERSE REACTIONS: Anticholinergics/antispasmodics produce certain effects which may be physiologic or toxic depending upon the individual patient's response. The physician must delineate these. Adverse reactions may include xerostomia; urinary hesitancy and retention; blurred vision and tachycardia; palpitations; mydriasis; cycloplegia; increased ocular tension; loss of taste; headache; nervousness; drowsiness; weakness; dizziness; insomnia; nausea; vomiting; impotence; suppression of lactation; constipation; bloated feeling; severe allergic reaction or drug idiosyncrasies including anaphylaxis; urticaria and other dermal manifestations; some degree of mental confusion and/or excitement, especially in elderly persons; and decreased sweating. With the injectable form there may be a temporary sensation of light-headedness and occasionally local irritation.

DOSEAGE AND ADMINISTRATION: Dosage must be adjusted to individual patient's needs.

Usual Dosage

Bentyl 10 mg capsule and syrup: *Adults:* 1 or 2 capsules or teaspoonful syrup three or four times daily. *Children:* 1 capsule or teaspoonful syrup three or four times daily. *Infants:* ½ teaspoonful syrup three or four times daily. (Dilute with equal volume of water.)

Bentyl 20 mg: *Adults:* 1 tablet three or four times daily.

Bentyl Injection: *Adults:* 2 ml (20 mg) every four to six hours intramuscularly only.

NOT FOR INTRAVENOUS USE

MANAGEMENT OF OVERDOSE: The signs and symptoms of overdose are headache, nausea, vomiting, blurred vision, dilated pupils, hot, dry skin, dizziness, dryness of the mouth, difficulty in swallowing, CNS stimulation. Treatment should consist of gastric lavage, emetics, and activated charcoal. Barbiturates may be used either orally or intramuscularly for sedation but they should not be used if Bentyl with Phenobarbital has been ingested. If indicated, parenteral cholinergic agents such as Urecholine® (bethanechol chloride USP) should be used.

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ents can accentuate behavioral or school problems and should be avoided.

Extensive psychological and educational testing appears to be unnecessary except in a study setting. Assisting school personnel to appreciate individual needs of the recovering child may be necessary. Family guidance and counseling may be useful and are encouraged.

15. What are the areas of future research?

Potential areas of research include: epidemiology, etiology, pathogenesis, diagnosis, management, and outcome. Most important is elucidation of the etiology and pathogenesis of this syndrome, with prevention as the ultimate goal.

Epidemiology

The low incidence of this disease results in small numbers of patients available for study at any single institution. The designation of a specific diagnostic code for Reye's syndrome in the International Classification of Diseases (10th Revision, Clinical Modification) would facilitate the determination of a more accurate incidence rate for Reye's syndrome.

Studies stratifying cases by age, sex, and race, by socioeconomic and environmental characteristics, and by geographic areas and location of residence (urban, suburban, rural) are needed to elucidate factors which may be important.

Etiology

Although the etiology of Reye's syndrome remains unknown, an association with a recent viral infection, especially influenza B and varicella, is well-established. However, the development of Reye's syndrome following any of these viral infections is uncommon, and why an individual develops the disease deserves further study. In addition, three recent population-based case-control studies have demonstrated an apparent association between salicylate usage and Reye's syndrome. Since the specific questions posed to the panel and discussed at the consensus conference were limited to diagnosis and treatment, the data on which this association is based were not presented but were discussed by several participants in the conference. Each of the three studies indicates an increase in the estimated relative risk of Reye's syndrome, which does not appear to be due to chance. However, other possible explanations of this association include the following: potential phases such as case-control selection (e.g., comparability of antecedent illness), information gathering (e.g., based on recall), and confounding (e.g., indications for salicylate use).

Parents and physicians should be aware that most, if not all, medications have potential deleterious effects; thus, caution in the use of salicylates in children with influenza or varicella is prudent. Currently, the risk is unknown for salicylates or for other antipyretic medications. Since salicylates have been given to children

with illnesses predisposing to Reye's syndrome without adverse effect, and cases have occurred in which these drugs have not been administered, salicylates alone cannot be responsible for its development. However, certain similarities between salicylism and Reye's syndrome and those studies reporting an association between the syndrome and salicylate ingestion indicate a need for carefully designed studies before recommending changes in antipyretic therapy of children.

The role of influenza and other viruses, aflatoxins, and genetic predisposition also deserve study.

Diagnosis

Although guidelines for the recognition of Reye's syndrome are generally accepted, information on the validity of the many proposed screening (clinical and laboratory) tests is incomplete and based on small numbers of patients or nonuniform diagnostic criteria. Particular attention should be given to determining the sensitivity, specificity, and predictive values of these various tests.

Management and Outcome

Critical and comparative evaluation of the treatment of Reye's syndrome can only proceed within the framework of randomized controlled trials. A need exists for determining the best available monitoring procedures, seeking the most sensitive indicators of patient status while exposing the patient to the minimal risk. Evaluations of treatment and monitoring regimens require strictly defined protocols and a sample size necessary for statistical analysis.

Both the short- and long-term sequelae of Reye's syndrome should be evaluated. Subtle effects on mental and motor capabilities should be evaluated by longitudinal data analysis. When possible, evaluations should be conducted without knowledge of the patient's treatment or monitoring regimens.

(The conference was sponsored by the National Institute of Neurological and Communicative Disorders and Stroke and co-sponsored by the National Institute of Allergy and Infectious Diseases; the National Institute of Arthritis, Diabetes, and Digestive and Kidney Diseases; the National Institute of Environmental Health Sciences; the National Institute of Child Health and Human Development; and the Division of Research Resources. Collaborating agencies included the Centers for Disease Control and the National Center for Health Statistics. Assistance was provided by the Office for Medical Applications of Research, NIH.)

Editor's Note: The North Carolina Division of Health Services, Communicable Diseases Department, states that in 1979, 11 cases of Reye's Syndrome were reported; in 1980, 14 cases; in 1981 (through November), 5 cases.

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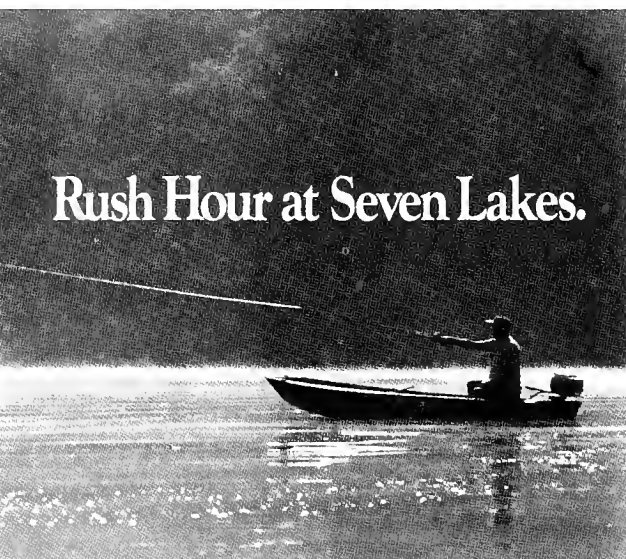
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April 6

"Greensboro Academy of Medicine Spring Symposium — Combined Approach to Common Medical Problems"

Place: Jefferson Standard Country Club, Greensboro

Credit: 6 hours

Info: W. H. Turner, M.D., 919-373-1383

April 29

"11th Annual New Bern Symposium: Emergency Medicine"

Place: Ramada Inn, New Bern

Info: William B. Hunt, Jr., M.D., Symposium Director, P.O. Box 2157, New Bern, NC 28560

May 14-15

"Chronic Disease Prevention and Health Promotion"

Place: Asheville

Info: Paula Schubert, Office of Continuing Education, UNC-CH School of Public Health 251-H, Chapel Hill, NC 27514 919-966-4032

May 19

"Infectious Disease Control"

Place: Central Carolina Hospital, Sanford

Fee: \$12

Credit: 2 hours

Info: R. S. Cline, M.D., Director of Continuing Medical Education, Central Carolina Hospital, 1135 Carthage Street, Sanford, NC 27330, 919-774-4100, Ext. 394

May 19-21

"North Carolina Heart Association Scientific Sessions"

Place: Winston-Salem

Info: The N.C. Heart Association, PO Box 2636, Chapel Hill, NC 27514, 919-968-4453

May 21

"Pediatrics Day 1982"

Place: Pitt County Memorial Hospital Auditorium, Greenville

Fee: \$50

Credit: 6 hours, AAFP applied for

Info: F. M. Simmons Patterson, M.D., Assistant Dean for Continuing Medical Education, East Carolina University School of Medicine, Greenville, NC 27834

May 21-23

"Eleventh Annual Pediatric Pulmonary Disease Conference"

Place: Searle Center, Duke University Medical Center

Fee: \$50

Credit: 12 hours

Info: Alexander Spock, M.D., Box 2994, Duke University Medical Center, Durham, NC 27710, 919-681-3364

Out-of-State — Southeastern Region

May 5-8

"63rd Annual Meeting of the Virginia Society of Ophthalmology and Otolaryngology, Inc."

Place: Williamsburg, Virginia

Info: Donna Strawderman, 4205 Dover Road, Richmond, VA 23221, 804-353-2721

May 7-9

"First Scientific Symposium of the Carolina-Virginia Society of Critical Care Medicine"

Place: Williamsburg, Virginia

Fee: \$100

Credit: 10 hours

Info: Pat Mendenhall, Education Coordinator, Dept. of Anesthesiology, UNC School of Medicine, Chapel Hill, NC 27514, 919-966-5140

May 12-14

"Clinical Auscultation of the Heart"

Place: Georgetown University Medical Center, Washington, D.C.

Info: Extramural Programs Dept, American College of Cardiology, 91 Old Georgetown Road, Bethesda, MD 20014

What? When? Where?

Please note: 1. The Continuing Medical Education Programs at Bowman Gray, Duke, East Carolina and UNC Schools of Medicine, Dorothea Dix, and Burroughs Wellcome Company are accredited by the American Medical Association. Therefore CME

June 10-12

"Rehabilitation of the Brain-Injured Adult"

Place: Williamsburg, Virginia

Info: Ellen F. Walsh, School of Allied Health Professions, Box 233, MCV Station, Richmond, VA 23298, 804-231-9011

June 10-13

"Dermatology for Non-Dermatologists"

Place: Myrtle Beach, South Carolina

Fee: \$295

Credit: 14 hours, AAFP

Info: "Dermatology for Non-Dermatologists," Box 2987, Duke Medical Center, Durham, NC 27710, 919-684-2504

June 11-13

"Arrhythmias and Cardiac Ischemia: Diagnoses and Management"

Place: Virginia Beach, Virginia

Fee: \$245

Credit: 13 hours, Category I; 13 hours AAFP

Info: International Medical Education Corp., 64 Inverness Drive, East, Englewood, Colo. 80112, 800-525-8651

June 23-26

"Ninth Annual Arts and Sciences of Sports Medicine"

Place: Charlottesville, Virginia

Info: Frank C. McCue, III, M.D., Box 243, University of Virginia Medical Center, Charlottesville, VA 22908, 804-924-2083

July 7-10

"Cardiology 1982: A Comprehensive Review of the Latest Techniques and Developments in the Field of Cardiology for the Practicing Cardiologist/Internist"

Place: Knoxville, Tennessee

Info: Extramural Programs Dept., American College of Cardiology, 911 Old Georgetown Road, Bethesda, MD 20014

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July 27-31

"Fifth Annual Symposium on Contemporary Clinical Neurology"

Place: Hilton Head Island, South Carolina

Info: Mrs. Joan Sullivan, Dept. of Neurology, Vanderbilt University School of Medicine, Nashville, TN 37212

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News Notes

The Bowman Gray School of Medicine Wake Forest University

Research is under way at the Bowman Gray School of Medicine using ultrasound to determine what normal and abnormal carotid arteries look like in youngsters between the ages of 6 and 20.

The work, headed by Dr. Ward A. Riley Jr., research assistant professor of neurology, is supported by a three-year, \$210,000 grant from the National Heart, Lung and Blood Institute.

Riley and his colleagues are using ultrasound technology developed at Bowman Gray which has a sensitivity necessary for examining the arteries of children and for measuring the thickness of their artery walls.

Riley explains that baseline information about normal and abnormal arteries, especially in youngsters who have not yet developed the risk factors for atherosclerosis, will help hasten the time when people routinely and safely can be screened from the early decades of life for the presence of atherosclerosis.

Seven hundred children are expected to be examined before Riley's project ends.

One of the measurements Riley will be making is the expansion of the artery wall with each heart beat. Previous Bowman Gray research has shown that the carotid arteries of children under the age of 10 expand about 16% with each heart beat, and that the elasticity of the artery wall then begins to decline by about 3% each decade.

Dr. Daniel J. Fernandes, assistant professor of biochemistry at Bowman Gray, has received a \$100,000 grant to study the regulation of one particular enzyme in human colon cancer cells.

The enzyme, thymidylate synthetase, has been the target for anti-cancer drugs such as floxuridine, a popular drug for treating solid tumors.

Fernandes is trying to determine why colon cancer cells become resistant to the drug. He speculates that the resistance may be due to increased levels of the enzyme. Preliminary evidence indicates that in resis-

It all adds up,

in today's major hypertension studies

VA Study¹

- 450 patients studied
- Mild to moderate hypertensives
- Comparison of propranolol and reserpine for Step-2 antihypertensive therapy
- **Conclusion:** when added to a thiazide diuretic, reserpine was effective in a larger percentage of patients (88%) than was propranolol (81%)!

HDFP Study²

- More than 10,000 patients studied
- Conducted at 14 centers over 5 years
- Proved that compliance with Step Care lowers death rate from all cardiovascular causes
- **Conclusion:** reserpine-thiazide regimens were preferred for Step-2 therapy, and were deemed effective, without significant adverse effects!

MRFIT Study³

- 6-year, 12,000-patient study, to be completed in 1982
- Assesses factors that may increase risk of cardiovascular disease
- Preferred Step-2 regimen: reserpine-thiazide
- **Full year's data:** reserpine is causing less depression than methyldopa, diuretics, or placebo!

That's why the combination in

Salutensin[®]
(hydroflumethiazide 50 mg/
reserpine 0.125 mg)

Is the preferred Step-2 regimen

Please see references and brief summary of prescribing information on adjacent page.

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Salutensin®
(hydroflumethiazide 50 mg/reserpine 0.125 mg)

Salutensin-Demi™
(hydroflumethiazide 25 mg/reserpine 0.125 mg)

Brief Summary of Prescribing Information (12) 10/27/78
For complete information consult Official Package Circular

WARNING

This fixed combination drug is not indicated for initial therapy of hypertension. Hypertension requires therapy titrated to the individual patient. If the fixed combination represents the dosage so determined, its use may be more convenient in patient management. The treatment of hypertension is not static, but must be reevaluated as conditions in each patient warrant.

CONTRAINDICATIONS

Anuria, oliguria, active peptic ulceration, ulcerative colitis, severe depression or hypersensitivity to its components contraindicates the use of Salutensin.

WARNINGS

Small-bowel lesions (obstruction, hemorrhage, perforation and death) have occurred during therapy with enteric-coated formulations containing potassium, with or without thiazides. Such potassium formulations should be used with Salutensin only when indicated and should be discontinued immediately if abdominal pain, distention, nausea, vomiting or gastrointestinal bleeding occurs. Use cautiously, and only when deemed essential, in fertile, pregnant or lactating patients.

Use in Pregnancy—Thiazides cross the placenta and can cause fetal or neonatal hyperbilirubinemia, thrombocytopenia, altered carbohydrate metabolism and possibly electrolyte disturbances. Fatal reactions may occur with reserpine during electroshock therapy; discontinue Salutensin 2 weeks before such therapy. Increased respiratory secretions, nasal congestion, cyanosis and anorexia may occur in infants born to reserpine-treated mothers.

PRECAUTIONS

Azotemia, hypochloremia, hyponatremia, hypochloremic alkalosis and hypokalemia (especially with hepatic cirrhosis and corticosteroid therapy) may occur, particularly with pre-existing vomiting and diarrhea. Potassium loss may cause digitalis intoxication. *Potassium loss responds to potassium-rich foods, potassium chloride or, if necessary, discontinuation of therapy.* Serum ammonia elevation may precipitate coma in precomatose hepatic cirrhotics. Discontinue therapy 2 weeks before surgery or if myocardial irritability, progressive azotemia or severe depression occur. Exercise caution in patients with chronic uremia, angina pectoris, coronary thrombosis or extensive cerebral vascular disease or bronchial asthma and in those with a history of peptic ulceration or bronchial asthma; in post-sympathectomy patients; in patients on quinidine; and in patients with gallstones, in whom biliary colic may occur. Patients who have diabetes mellitus or who are suspected of being prediabetic should be kept under close observation if treated with this agent.

ADVERSE REACTIONS

Hydroflumethiazide—Skin-rashes (including exfoliative dermatitis), skin photosensitivity, urticaria, necrotizing angitis, xanthopsia, granulocytopenia, aplastic anemia, orthostatic hypotension (potentiated with alcohol, barbiturates or narcotics), allergic glomerulonephritis, acute pancreatitis, liver involvement (intrahepatic cholestatic jaundice), purpura plus or minus thrombocytopenia, hyperuricemia, hyperglycemia, glycosuria, malaise, weakness, dizziness, fatigue, paresthesias, muscle cramps, skin rash, epigastric distress, vomiting, diarrhea and constipation.

Reserpine—Depression, peptic ulceration, diarrhea, Parkinsonism, nasal stuffiness, dryness of the mouth, weight gain, impotence or decreased libido, conjunctival injection, dull sensorium, deafness, glaucoma, uveitis, optic atrophy, and, with overdosage, agitation, insomnia and nightmares.

USUAL DOSE

The usual adult dose of Salutensin is one tablet once or twice daily. If a smaller amount of thiazide diuretic is desired, Salutensin-Demi, one tablet once or twice daily can be given.

SUPPLIED

Bottles of 10 and 1000 scored tablets.

REFERENCES

1. Propranolol in the treatment of essential hypertension. Veterans Administration Cooperative Study Group on Antihypertensive Agents. *JAMA* 237:2303-2310, 1977.
2. Five-year findings of the hypertension detection and follow-up program: I. Reduction in mortality of persons with high blood pressure, including mild hypertension. Hypertension Detection and Follow-up Program Cooperative Group. *JAMA* 242:2562-2571, 1979.
3. Moser M, Kaplan NM, Sullivan JM, Paul O, in discussion: Perspectives on MRFIT: Can the interim data be applied to your practice...? An Interim Report on the Ongoing Multiple Risk Factor Intervention Trial: MRFIT. *New Perspectives on Hypertension* 2(1):10-19, February 1981.

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tant tumor cells, the enzyme levels are so high that not enough of floxuridine can get into the cancer cell to significantly inhibit the enzyme's activity.

Dr. Velma G. Watts has been appointed to the Bowman Gray faculty as director of the Office of Minority Affairs and instructor in medical education.

Before coming to Bowman Gray, she worked at the regional office of the North Carolina Department of Public Instruction in Greensboro. She also has worked as a staff development specialist for the North Carolina Advancement School and has taught in the Winston-Salem/Forsyth County School System.

In her new position, she will recruit minority students and develop support programs for those students.

Dr. Watts holds the B.S. and M.A. degrees from North Carolina A & T University, the M.E. degree from the University of North Carolina at Chapel Hill and the Ph.D. degree in educational administration from Duke University.

A Bowman Gray radiologist was the subject of a cover story in one of the nation's most widely circulated radiological magazines.

Dr. I. Meschan, professor of radiology and director of Bowman Gray's radiological continuing education, was featured on the cover and in a story in the *Journal of Applied Radiology*. He was chairman of the medical school's Department of Radiology for 22 years before giving up that post in 1977.

The magazine describes Meschan as "scholar, writer, researcher, teacher" and adds that he "has been making radiologic history for the past 30 years, from the publication of an *Atlas of Normal Radiographic Anatomy* to pioneering research on radionuclides."

It was the second time within the past year that "Applied Radiology" has featured a Bowman Gray radiologist. A previous cover story dealt with the accomplishments of Dr. Elias G. Theros, professor of radiology.

A textbook co-edited by a psychologist at Bowman Gray has been rated one of the "Ten Best Behavioral Books for 1981" by *Behavioral Medicine*, a national journal.

Dr. Laurence A. Bradley's book, *Medical Psychology: Contributions to Behavioral Medicine*, was chosen from about 300 books for the honor.

Bradley is an assistant professor of psychology and head of the Section on Medical Psychology at Bowman Gray.

His book, published last summer, covers assessment, treatment and prevention of medical problems such as hypertension, chronic pain, obesity and cancer.

Co-editor of the book is Dr. Charles K. Prokop of

the Department of Psychiatry at Texas Tech University Health Sciences Center.

Dr. Ernest T. Ahl Jr. has been appointed to the Bowman Gray faculty as assistant professor of pathology.

In his new position, he will serve as director of the immunoperoxidase laboratory at Baptist Hospital as well as having teaching and research responsibilities. His principal research interest is disorders of the immune system.

Bowman Gray's Department of Family and Community Medicine has opened a clinic for the elderly residents at Winston-Salem's Crystal Towers. The clinic, open two mornings a week, is staffed by a physician assistant who is the primary provider of care at the clinic.

Crystal Towers is a city-owned apartment building near the downtown business district. It has about 200 residents, most of whom are over the age of 60.

The clinic is financed in part by a three-year grant from the Kate B. Reynolds Health Care Trust to explore the use of physician extenders in providing health care to the aged in such places as long-term care facilities.

In addition to the physician assistant, the clinic involves the services of two doctors, a licensed practical nurse and a pharmacist.

Most of the medical services provided at the clinic since it opened the first of the year have involved managing chronic medical problems.

Dr. Glenn P. Gravlee, assistant professor of anesthesia, has been selected chairman of the Medical Liaison Committee of the Society of Cardiovascular Anesthesiologists. He has been appointed to the Board of Governors of the American Board of Cardiovascular Perfusion representing the Society of Cardiovascular Anesthesiologists.

Dr. Phillip M. Hutchins, professor of physiology, has been elected a member of the Life Science Advisory Committee of the National Aeronautics and Space Administration for the Space Lab Flight, scheduled for 1984. He is tentatively scheduled to have experiments flown on the first dedicated Life Science Mission (Space Lab 4) scheduled for 1985.

Dr. W. Keith O'Steen, professor and chairman of the Department of Anatomy, has been elected to a two-year term on the Council of the Association of Anatomy Chairmen.

Dr. George Podgorny, clinical associate professor

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of surgery (emergency medicine), has been elected to the Board of Directors of the Medic-Alert Foundation International.

Duke University Medical Center

A Duke University Medical Center plastic surgeon began using an argon laser in January to fade unsightly birthmarks, tattoos and "spider nevi." The \$25,000 laser was purchased by Duke's Department of Surgery and will be used by staff plastic surgeons.

"We can't completely obliterate these marks, but for most people we can make them significantly lighter," said Dr. Ronald Riefkohl, an assistant professor of plastic surgery. Riefkohl said about 70 percent of patients get "good to excellent results with the technique," which is done on an outpatient basis with localized anesthesia. He said about 30 percent of patients have lesions that are too deep to be faded by the treatment.

Usually each treatment session lasts about 30 to 45 minutes, depending on the size of the mark, the plastic surgeon said. The complication rate with treatment of marks situated below the collar bones is greater, he said, and the laser therapy works best removing marks on the face and hands.

"Each patient is given a test patch to see how well

their skin reacts to the laser, or whether they will scar," Riefkohl said. "Overall, about five percent of patients treated with the argon laser will have some scarring."

Dr. David C. Sabiston Jr., Duke University Medical Center's chairman of the Department of Surgery and James B. Duke Professor of Surgery, spoke on "Surgical Relief of Angina" at a Jan. 5 lecture.

The lecture was the fifteenth of the public relations "Health Night Out" series, free monthly programs on health topics.

Sabiston discussed the causes of coronary disease, its symptoms and what heart surgery is like. He reviewed the ways heart disease is diagnosed and outlined the criteria physicians frequently use to judge whether a person is a candidate for heart surgery.

"Heart surgery has become very safe and very reliable," Sabiston said. "In some cases it's clearly a life saver, and in nearly all cases it greatly improves the quality of life of the person with heart disease."

Sabiston, who is regarded internationally as an expert in thoracic surgery, told the lay audience that a change in lifestyle could help prevent coronary artery disease. He said cigarette smoking tops the list of risk factors.

"It's relatively uncommon to find a patient with severe atherosclerosis who is not a smoker," he said.

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Hundreds of Duke University and medical center staffers attended memorial services Jan. 6 in Duke Chapel for longtime Duke biochemist Dr. Philip Handler, who died Dec. 29. Handler retired recently as president of the National Academy of Sciences. He succumbed in a Boston hospital after a lengthy illness.

Handler was 64. He had resumed his position as James B. Duke Professor of Biochemistry after 12 years in Washington, D.C.

Duke President Terry Sanford said Handler was "an outstanding scientist, teacher, author, administrator and public servant who touched and improved the lives of all of us."

Dr. William G. Anlyan, vice-president for health affairs, said Handler was one of the key leaders at Duke University Medical Center who helped a young private medical school become an internationally respected institution.

"He had a worldwide reference point of view in health and science," Anlyan said.

Handler devoted much of his life as a scientist to investigations of such questions in biochemistry as the nature of the vitamin deficiency disease pellagra, the workings of enzymes and evolution of life from a single ancestor.

In the political arena, he worked to strengthen the role of scientists in shaping national policy.

A native of New York City, Handler received his B.S. from the College of the City of New York in 1936 and his Ph.D. from the University of Illinois in 1939. Immediately after finishing graduate work, he started his career at Duke as an instructor in nutrition and physiology.

He came to Duke University Medical Center when it was not yet a decade old, and thus is considered one of its founding fathers. In 1950, he became chairman of biochemistry, a position he held until 1969.

He topped his career as a consultant to presidents, committees and Congress with the presidency of the National Academy of Sciences, a post he held from 1969 to 1981.

Three Duke University professors were elected fellows of the American Association for the Advancement of Science at the association's annual meeting in Washington, D.C., in January.

Drs. William G. Anlyan, vice president for health affairs; Ewald W. Busse, associate provost and dean of medical and allied health education; and Hugh G. Robinson, professor of physics, are the professors who were honored.

The AAAS describes a fellow as "a member whose efforts on behalf of the advancement of science or its application are scientifically or socially distinguished."

Reduced reimbursements from state and federal governments have forced Duke University Hospital to intensify its efforts to reduce costs, the hospital's chief executive officer Andrew G. Wallace, M.D., announced in December.

"Duke Hospital treats large numbers of Medicare and Medicaid beneficiaries," Wallace said. "Together they make up 40 percent of all our patients, so government decisions to pay less than our actual costs for the services we provide have an enormous impact on our finances. We have no choice but to cut expenditures."

He said the cost reduction effort would not affect the scope and quality of patient care services, but said other expenditures would be cut "wherever possible."

Wallace said his principal concern is to protect existing services, employees and hospital rates.

"If we can't find savings large enough to offset the reductions in our reimbursements, we will have to consider cutting services to charity care patients, increasing the rates we charge private patients, and reducing our workforce," Wallace said. "None of us wants that."

Duke neurosurgeon Dr. Blaine S. Nashold has operated on more than 75 paraplegics with intractable pain using a new surgery technique known as "DREZ" Coagulation. All of the pain sufferers have gained long-term relief.

"With a fine electrode we kill the nerve where the pain originates in the spinal cord by coagulation," Nashold said. "We use a microscope to localize the damaged areas in the spinal cord for treatment."

Nashold said about 10 percent of all paraplegics have burning pain around the body at the point just above where they are paralyzed. Nashold developed the technique to help patients who he described as having unbearable pain.

"We're talking about patients whose doctors have exhausted all possible ways to deal with pain. Many of these patients become addicted to narcotics. I know of two paraplegics who committed suicide because the pain was so unbearable."

Because the internationally recognized neurosurgeon has shared the technique through lectures and clinical instruction, the DREZ coagulation surgery is offered in other major medical centers in the U.S. and abroad. Nashold recommends that surgery be done at medical centers that have pain clinics. At Duke, candidates for the surgery are evaluated and treated through the 10-year-old pain clinic.

"We use a large number of tests to eliminate patients who are experiencing pain because they are depressed," he said. "We are continuing research to refine the DREZ."

When someone is poisoned, minutes count.

"Whether it's a three-year-old who has swallowed lye or an adult who has taken the wrong medicine in the middle of the night, it's crucial to find out the proper treatment fast," said Dr. Shirley Osterhout, director of Duke's Poison Control Center.

To make it easier to get information about poison treatment, Osterhout said Duke's Poison Control

Center now has a toll-free telephone number — 1-800-672-1697.

"Make note of that number," Osterhout said. "It could save someone's life."

The physician said most poisonings are recognized before actual symptoms appear. "That's why we provide immediate emergency hospital visits," she said.

Osterhout said 82 percent of all calls to Duke's Poison Control Center are from outside Durham County. The center receives more than 5,000 calls a year, she said, and the majority of those calls concern children under the age of 4.

"We offer help 24 hours a day, seven days a week," said Osterhout, an assistant professor of pediatrics.

Residents of the Durham area can reach the Poison Control Center by calling the switchboard at Duke University Hospital, 684-8111, and requesting the Poison Control or beeper ID #7410.

Sandra H. Bigner, assistant professor in the Department of Pathology, received a \$42,681 award from the National Institute of Neurological and Communicative Disorders and Stroke. She is studying the cytopathology and cytogenetics of CNS tumors.

Vytautas A. Pakinis, in the Department of Ophthalmology, received a national research service award of \$22,040 from the National Eye Institute.

Richard S. Metzgar, professor in the division of immunology, was awarded a \$95,410 grant from the National Cancer Institute for research in human leukemia.

Page A. Anderson, associate professor in the division of pediatric cardiology and assistant professor of physiology, received a development award of \$38,416 from the National Heart, Lung and Blood Institute. Anderson is studying "Developing Myocardium: Biophysical Aspects."

R. Sanders Williams, assistant professor of cardiology and medical director of DUPAC, received a new investigator research award of \$26,163 for the National Heart, Lung and Blood Institute. Williams is studying membrane receptors and physical conditioning.

Hilliard F. Seigler, professor in the Department of Surgery and associate professor of microbiology and immunology, received a \$41,882 grant from the National Cancer Institute. He is studying the immunodiagnosis of melanoma.

Stuart F. Robinson, assistant professor in the division of gastroenterology, received a \$45,985 research grant from the National Institute of Arthritis, Diabetes, Digestive and Kidney Diseases. Robinson is studying elevated biliary pressures on hepatic lipids.

D. Bernard Amos, professor of experimental surgery and immunology, was awarded a \$258,154 re-

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Cyclapen[®]-W is just as effective in otitis media and streptococcal tonsillopharyngitis^{†, 2}

Cyclapen[®]-W produces a significantly lower incidence of the most common side effect, diarrhea.²

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Rapid onset of action with fewer side effects.

*Rapidly excreted unchanged in urine. Clinical efficacy may not always correlate with blood levels. †Due to susceptible organisms.

1. Ginsburg CM, McCracken GH Jr, Zweighaft TC, Clahsen JC. Comparative pharmacokinetics of cyclacillin and amoxicillin in infants and children. *Antimicrob Ag Chemother* 13:1025-1031 (June) 1981.

2. Multicenter trials. Data to be published.

See important information on page after next.

Compared to ampicillin

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Cyclapen[®]-W (cyclacillin) produces peak serum concentrations* almost four times higher and over one hour earlier.³

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3. Data on file, Wyeth Laboratories. Copyright © 1981, Wyeth Laboratories. All rights reserved.

See important information on adjoining page.

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CYCLAPEN®-W (cyclacillin)

Indications

Cyclacillin has less *in vitro* activity than other drugs in the ampicillin class and its use should be confined to these indications: Treatment of the following infections:

RESPIRATORY TRACT

Tonsillitis and pharyngitis caused by Group A beta-hemolytic streptococci
Bronchitis and pneumonia caused by *S. pneumoniae* (formerly *D. pneumoniae*)
Otitis media caused by *S. pneumoniae* (formerly *D. pneumoniae*) and *H. influenzae*
Acute exacerbation of chronic bronchitis caused by *H. influenzae**

*Though clinical improvement has been shown, bacteriologic cures cannot be expected in all patients with chronic respiratory disease due to *H. influenzae*.

SKIN AND SKIN STRUCTURES (integumentary) infections caused by Group A beta-hemolytic streptococci and staphylococci, non-penicillinase producers.

URINARY TRACT INFECTIONS caused by *E. coli* and *P. mirabilis*. (This drug should not be used in any *E. coli* and *P. mirabilis* infections other than urinary tract.)

NOTE: Perform cultures and susceptibility tests initially and during treatment to monitor effectiveness of therapy and susceptibility of bacteria. Therapy may be instituted prior to results of sensitivity testing.

Contraindications Contraindicated in individuals with history of an allergic reaction to penicillins.

Warnings Cyclacillin should only be prescribed for the indications listed herein.

Cyclacillin has less *in vitro* activity than other drugs of the ampicillin class. However, clinical trials demonstrated it is efficacious for recommended indications.

Serious and occasional fatal hypersensitivity (anaphylactoid) reactions have been reported in patients on penicillin. Although anaphylaxis is more frequent following parenteral use, it has occurred in patients on oral penicillins. These reactions are more apt to occur in individuals with history of sensitivity to multiple allergens. There are reports of patients with history of penicillin hypersensitivity reactions who experienced severe hypersensitivity reactions when treated with a cephalosporin. Before penicillin therapy, carefully inquire about previous hypersensitivity reactions to penicillins, cephalosporins and other allergens. If allergic reaction occurs, discontinue drug and initiate appropriate therapy. Serious anaphylactoid reactions require immediate emergency treatment with epinephrine, Oxygen, I.V. steroids, airway management, including intubation, should also be administered as indicated.

Precautions Prolonged use of antibiotics may promote overgrowth of nonsusceptible organisms. If superinfection occurs, take appropriate measures.

PREGNANCY: Pregnancy Category B. Reproduction studies performed in mice and rats at doses up to 10 times the human dose revealed no evidence of impaired fertility or harm to the fetus due to cyclacillin. There are, however, no adequate and well-controlled studies in pregnant women. Because animal reproduction studies are not always predictive of human response, use this drug during pregnancy only if clearly needed.

NURSING MOTHERS: It is not known whether this drug is excreted in human milk. Because many drugs are, exercise caution when cyclacillin is given to a nursing woman.

Adverse Reactions Oral cyclacillin is generally well tolerated. As with other penicillins, untoward sensitivity reactions are likely, particularly in those who previously demonstrated penicillin hypersensitivity or with history of allergy, asthma, hay fever, or urticaria. Adverse reactions reported with cyclacillin: diarrhea (in approximately 1 out of 20 patients treated), nausea and vomiting (in approximately 1 in 50), and skin rash (in approximately 1 in 60). Isolated instances of headache, dizziness, abdominal pain, vaginitis, and urticaria have been reported. (See **WARNINGS**) Other less frequent adverse reactions which may occur and are reported with other penicillins are anemia, thrombocytopenia, thrombocytopenic purpura, leukopenia, neutropenia and eosinophilia. These reactions are usually reversible on discontinuation of therapy.

As with other semisynthetic penicillins, SGOT elevations have been reported.

As with antibiotic therapy generally, continue treatment at least 48 to 72 hours after patient becomes asymptomatic or until bacterial eradication is evidenced. In Group A beta-hemolytic streptococcal infections, at least 10 days' treatment is recommended to guard against risk of rheumatic fever or glomerulonephritis. In chronic urinary tract infection, frequent bacteriologic and clinical appraisal is necessary during therapy and possibly for several months after. Persistent infection may require treatment for several weeks.

Cyclacillin is not indicated in children under 2 months of age.

Patients with Renal Failure Cyclacillin may be safely administered to patients with reduced renal function. Due to prolonged serum half-life, patients with various degrees of renal impairment may require change in dosage level (see **DOSAGE AND ADMINISTRATION** in package insert).

Dosage (Give in equally spaced doses)

INFECTION	ADULTS	CHILDREN*
Respiratory Tract		
Tonsillitis & Pharyngitis	250 mg q.i.d.	body weight < 20 kg (44 lbs) 125 mg q.i.d. body weight > 20 kg (44 lbs) 250 mg q.i.d.
Bronchitis and Pneumonia		
Mild or Moderate Infections	250 mg q.i.d.	50 mg/kg/day q.i.d.
Chronic Infections	500 mg q.i.d.	100 mg/kg/day q.i.d.
Otitis Media	250 mg to 500 mg q.i.d.	50 to 100 mg/kg/day† q.i.d.
Skin & Skin Structures	250 mg to 500 mg q.i.d.	50 to 100 mg/kg/day† q.i.d.
Urinary Tract	500 mg q.i.d.	100 mg/kg/day

*Dosage should not result in a dose higher than that for adults.

†depending on severity

search grant from the National Institute of General Medical Sciences. His project is "The Immunogenetics of Man, Mice and Viruses."

Gerald S. Lazarus, J. Lamar Callaway Professor and chief of the division of dermatology, was awarded a \$95,787 research grant from the National Institute of Arthritis, Diabetes, Digestive and Kidney Diseases to study "Activation of Proteinases by Pemphigus Antibody."

James D. Crapo, associate professor and chief of the division of allergy and respiratory diseases, was awarded a \$46,769 research grant from the National Heart, Lung and Blood Institute. The title of his study is "Oxygen Induced Injury to the Pulmonary Endothelium."

The Eye Center has been awarded a \$12,000 grant from Research to Prevent Blindness (RPB), according to Dr. Robert Machemer, chairman of the Department of Ophthalmology. Duke has received \$97,000 over 16 years from RPB to support vision research, in addition to special RPB awards given to individual scientists.

Raymond E. Ideker, assistant professor of pathology and medicine, received a \$93,312 grant from the National Heart, Lung and Blood Institute to study "Cardiac Mapping of Ventricular Fibrillation."

Stephen H. Gehlbach, associate professor in the family medicine program, received a research grant of \$58,197 from the National Center for Health Services Research — OASH to study ways of improving drug prescribing in family practice.

Richard Whorton, assistant professor in the Department of Pharmacology, received a research grant award of \$29,583 from the National Heart, Lung and Blood Institute for his work on "Mechanisms of Prostaglandin Mediated Renin Release."

John W. Regan, in the division of cardiology, received an \$18,380 national research service award from the National Heart, Lung and Blood Institute to study hypertension.

Harold R. Silberman, professor of hematology and medical oncology, received a \$143,566 grant from the National Cancer Institute for cooperative studies in cancer therapy.

Mary C. Rose, assistant medical research professor in the Department of Biochemistry, received a \$38,764 grant from the National Heart, Lung and Blood Institute to study bronchial secretions.

Darell D. Bigner, professor in the Department of Pathology, was awarded a \$67,097 research grant from the National Cancer Institute to study the etiology, immunology and biology of brain tumors.

Edward L. Pritchett, assistant professor in the division of cardiology, was awarded a \$71,830 grant from the National Heart, Lung and Blood Institute to study the mechanism of spontaneous tachycardia.

Gerald M. Rosen, associate professor of pharmacology, was awarded a \$62,215 research grant from the National Institute of General Medical Sciences. Rosen is studying post traumatic fatty acid metabolism and cellular injury.

Paul G. Killenberg, associate professor in the divi-

sion of gastroenterology, was awarded a \$74,951 research grant from the National Institute of Arthritis, Diabetes, Digestive and Kidney Diseases. Killenberg is studying the enzymatic basis of bile acid sulfation.

John W. Gutknecht, professor of physiology at the Duke University Marine Laboratory, received a research grant of \$31,067 from the National Institute of Environmental Health Sciences to study heavy metal transport and effects on membranes.

Deborah Bender, associate in the Department of Community and Occupational Medicine, received a \$25,000 grant from the Public Welfare Foundation, Inc. to support the Andean Rural Health Project.

East Carolina University School of Medicine

The School of Medicine's Health Science Library moved into the school's Brody Medical Science Building in December. The library is the first unit to occupy the new \$26 million facility which is scheduled for full occupancy this summer.

The library's 30 fulltime staff plus additional temporary employees worked throughout the Christmas holidays unpacking an estimated 5,000 boxes containing 86,000 volumes and 11,000 reels of microfilm.

This is the fourth time the library has moved since it was established in 1969. It was originally located in a seminar room in Joyner Library and moved from there to the east cafeteria building and then to the Science Complex. In 1972 the collection moved to the Belk Building.

The new two-floor, 32,000-square-foot facility offers convenient access to the library's full collection, comfortable reading areas, and individual and group study rooms. Circulation, reference, current journal areas and computer search rooms are located on the first floor.

Audiovisual materials and stacks are on the second floor, which also includes a history of medicine room.

The Health Science Library serves students in the university's medicine, nursing and allied health programs and is a regional resource for physicians and health professionals in Eastern North Carolina.

The Department of Pharmacology was awarded a Wellcome Visiting Professorship in the Basic Medical Sciences from the Federation of American Societies for Experimental Biology.

Dr. David J. Greenblatt, Tufts-New England Medical Center Hospital, was chosen as visiting professor for the lecture series designed to stimulate interest in basic and applied pharmacology. While at the medical school, Greenblatt presented public lectures entitled "Clinical Pharmacology of Valium and Other Benzodiazepines," "Drug Dispositions in Old Age," "Sedatives and Hypnotics in Family Practice: Use and Misuse," "Understanding Pharmacokinetics" and "Interpreting Serum Concentration of Drugs."

Greenblatt is professor of psychiatry and associate

professor of medicine at Tufts University School of Medicine and Tufts-New England Medical Center Hospital in Boston. He also serves as the chief of the Division of Clinical Pharmacology.

Dr. James G. Jones, professor and chairman, Department of Family Medicine, has been appointed to the Society of Teachers of Family Medicine's International Family Medicine Education Committee.

Dr. Robert P. Dillard, assistant professor of pediatrics, was elected vice-chairman of the Professional Advisory Committee for the Coastal Plains' Chapter of the March of Dimes. Dillard, in collaboration with Dr. Melvin S. Swanson, associate director for educational evaluation, also has received a \$2,000 grant from Mead Johnson and Company for "Development of a Microcomputer Based Information Retrieval System for Well-Baby Care."

An article written by Dr. John C. Yeager, assistant professor of physiology, and Marvin Whitehurst, physiology research technician, appeared in the January issue of the magazine *Life Sciences*. The article is entitled "Verapamil Prevents Isoproterenol-induced Cardiac Failure in the Rat."

Dr. Dennis R. Sinar, associate professor of medicine, has co-authored an article entitled "Migrating Action Potential Complex Activity in Rabbit Ileal Loops Is Produced by the B-subunit of Cholera Enterotoxin." The article appeared in the January issue of the *American Journal of Physiology*.

Sinar also attended the recent meeting of the Southern Section of the American Federation for Clinical Research. During the meeting, he presented a paper entitled "Dissociation of Myoelectric Activity and Fluid Output in Ricin-damaged Small Intestine."

Several faculty members collaborated on a paper appearing in the November issue of *Surgery*. The paper is "Prophylactic Cefazolin in Gastric Bypass Surgery" and collaborators include: Dr. Walter J. Pories, professor and chairman of the Department of Surgery; Dr. Byron T. Burlingham, professor and chairman of the Department of Microbiology; Dr. Robert S. Fulghum, associate professor of microbiology; and Diane Meelhiem, surgical family nurse practitioner.

Dr. R. Stephen Porter, Department of Family Medicine, presented medical grand rounds at the Kingsbrook Jewish Medical Center in Brooklyn. Porter's grand rounds topic was "Individualizing Drug Therapy: Practical Application of Therapeutic Drug Monitoring."



In Vertigo

On Balance...

RU-VERT

Each Tablet Contains:

Pentamethetrazol	25.0 mg
Pheniramine maleate	12.5 mg
Nicotinic acid	50.0 mg

Clinically proven actions

- Antihistaminic
- Cerebral stimulant
- Vasodilator

Few side effects

- Vasodilation occasionally causes facial flushing which can be minimized by recommending that Ru-Vert® be taken following meals or with food.

Dosage

- One or two tablets three times a day

Please see next pages for a summary of prescribing information

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In Vertigo On Balance... RU-VERT[®]

See following prescribing information.

DESCRIPTION: Each tablet contains the following active ingredients:

Pentylenetetrazol	25.0 mg
Pheniramine maleate	12.5 mg
Nicotinic acid	50.0 mg

INDICATIONS: Ru-Vert is indicated as an adjunct therapy in the symptomatic treatment of acute or chronic vertigo.

CONTRAINDICATIONS: Convulsive disorders or known history of sensitivity to any of the listed active ingredients. Because of the vasodilating action of nicotinic acid, Ru-Vert should not be used in patients with hypertension.

WARNINGS: The safety of this preparation during pregnancy and lactation has not been established. Use of this drug requires that the physician evaluate the potential benefits of the drug against any possible hazard to the mother and child.

PRECAUTIONS: Although there are no absolute contraindications to pentylenetetrazol, it should be used with caution in epileptic patients or those known to have a low convulsive threshold or a focal brain lesion. Caution should be exercised when treating patients with high doses of Ru-Vert who have heart disease. While pentylenetetrazol does not act directly on the myocardium, the results from central vagal stimulation could cause bradyarrhythmia.

Pheniramine maleate, like other antihistamines, may produce sedative side effects in certain patients.

Transient vasodilation due to rapid absorption of nicotinic acid may produce facial flushing and a sensation of warmth. These effects may be ameliorated by recommending that Ru-Vert be taken following meals or with food.

ADVERSE REACTIONS: Pentylenetetrazol in high doses may produce toxic symptoms typical of central nervous system stimulants, which act on the higher motor centers and the spinal cord. Convulsions resulting from this drug are so intense and are not induced by external stimuli. They usually last for several minutes and are followed by profound depression and respiratory paralysis. Death has been reported from the injection of 15 grams of pentylenetetrazol.

DRUG ABUSE: Drug dependence has not been reported with Ru-Vert.

OVERDOSEAGE: Signs and symptoms of acute overdose may be due primarily from overstimulation of the central nervous system and from excessive vasodilation with resulting autonomic nervous system imbalance. The symptoms may include the following: vomiting, pallor, tremors, hyperreflexia, sweating, confusion, hallucinations, headache, hyperpyrexia, tachycardia. Treatment consists of supportive measures. If signs and symptoms are not too severe and the patient is conscious, gastric evacuation may be accomplished by induction of emesis or gastric lavage.

Intensive care must be provided to maintain adequate circulation and respiratory exchange.

DOSEAGE AND ADMINISTRATION: The recommended dosage of Ru-Vert for vertigo or motion sickness is 1 or 2 tablets three times a day with meals or light snacks. This drug is not for use in children under 12 years of age.

HOW SUPPLIED:

Bottles of 100 tablets
Bottles of 300 tablets

NDC 052-1-100-01
NDC 052-1-300-03

Federal law prohibits dispensing without prescription.

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Dr. Sudesh Kataria, assistant professor of pediatrics, has received \$1,000 from Mead Johnson Company for a project entitled "Infant Feeding: Practices and Belief." The grant is part of an American Pediatric Association collaborative study among the medical schools at East Carolina, Yale University and Vanderbilt.

University of N.C. School of Medicine & N.C. Memorial Hospital

If all goes according to plan, cancer researchers at the School of Medicine will move into the new \$8.4 million Lineberger Cancer Research Center building by June 1984.

Construction began last month on the 35,000 square foot, three-story building. The new cancer research building will house the main administrative offices, a library and conference room, laboratory and office space for faculty investigators and containment facilities for chemical carcinogenesis, recombinant DNA and virus research. There also will be specialized rooms for existing tissue culture and electron microscopy core facilities.

Construction is being funded by a \$1.37 million grant from the National Cancer Institute, \$3.20 million from institutional funds and \$3.83 million raised from private donations.

Seven School of Medicine faculty members have received Junior Faculty Development awards for 1982.

Five were recipients of Institutional Development Foundation awards. They are Drs. Philip J. Bassford, bacteriology and immunology; Robert A. Eisenberg, medicine; Stephen A. Grupp, surgery; William B. Guilford, radiology; and James F. Howard Jr., neurology and medicine.

Recipients of R. J. Reynolds Industries award are Drs. Kathleen K. Sulik, anatomy, and Thomas W. Traut, biochemistry and nutrition.

All the recipients are assistant professors in the departments noted.

University-wide, 31 Junior Faculty Development awards were given, equivalent to a 55% increase over the number of awards made previously.

Dr. Barbara Hulka, professor of epidemiology in the School of Public Health, has been appointed head of the epidemiology program in the Cancer Research Center in the medical school.

"The center is fortunate to have a nationally distinguished epidemiologist, Dr. Hulka, as the head of its cancer epidemiology program," said center director Dr. Joseph S. Pagano, "particularly at a time when the epidemiology of cancer is being recognized as of increasing importance."

Hulka will coordinate interdisciplinary research projects between the School of Public Health and the Cancer Research Center that will focus on the analysis of cancer cause, prevention and treatment. Under her leadership, a three-year study of endometrial cancer involving a number of faculty from both schools has recently been completed.

She recently was appointed to the prestigious Board of Scientific Counselors at the National Cancer Institute's Division of Resources, Centers and Community Activities. The committee meets three times a year to set guidelines for cancer centers, educational programs and research. Hulka also is chairperson of the Epidemiology and Disease Control Study Section, the only epidemiology grants review section of the divisions of the National Institutes of Health.

Hulka received a B.A. from Radcliffe College in Cambridge, Mass., an M.S. from the Juilliard School of Music in New York, an M.D. from the Columbia College of Physicians and Surgeons in New York in 1959, and an M.P.H. from the Columbia School of Public Health in 1961.

Drs. Colin D. Hall, associate professor of neurology and Patricia Porter, associate professor of medical allied health professions presented a workshop "School Intervention in the Neuromuscularly Handicapped Child," to the Association for the Severely Handicapped, Oct. 17 in New York City.

Dr. Jeffrey Andresen, associate professor of psychiatry, was an invited speaker at the University of Vermont College of Medicine Oct. 6-7 in Burlington, Vermont.

Dr. James H. Scatliff, professor and chairman of the Department of Radiology, was a member of the guest faculty at the Eighth Annual Course on Computed Tomography, Rush-Presbyterian, St. Luke's Medical Center. Dr. Scatliff presented talks on CT in the diagnosis of hemorrhagic stroke and CT in the diagnosis of arachnoid cysts in children.

Dr. Walter B. Greene, assistant professor of surgery and pediatrics, presented a paper titled, "The Use of a Modified Isokinetic Strengthening Program in Patients with Hemophilia" at the annual meeting of the North Carolina Orthopaedic Association in Pinehurst on Oct. 9. The paper was co-authored by

Elizabeth Mostrom of the physical therapy department.

Dr. Edward J. Shahady, professor of family medicine, attended the third international workshop on the family, sponsored by the Universidad Nacional Autonoma de Mexico City. He gave four presentations: "The Training of the General/Family Physician," "The Formation of General/Family Medicine Faculty," "Utilization of General/Family Faculty in the Post Graduate," and "The Role of the First Contact Centers in the Formation of General/Family Physician."

Dr. William B. Wood, associate professor of medicine, director of medical alumni affairs and continuing medical education, was elected vice president of the North Carolina Society of Internal Medicine at the organization's annual meeting in November.

Dr. James W. Lea, associate professor of family medicine, recently discussed maternal, child and family health training projects with health officials from Sudan, Nigeria and the Ivory Coast.

Two members of the Department of Medicine have been elected to membership in the Southern Society for Clinical Investigation. Dr. H. Shelton Earp, associate professor, and David R. Clemmons, assistant professor, were elected at the organization's annual meeting Jan. 14-16 in New Orleans.

Dr. William L. Isley, a fellow in the Department of Medicine's division of endocrinology, has received the Burroughs-Wellcome Young Investigator Award for his research paper entitled, "The Nutritional Regulation of Serum Somaomedin-C Concentrations in Humans." The paper was co-authored by Dr. Louis E. Underwood, professor of pediatrics and Dr. David R. Clemmons, assistant professor of medicine, and was presented at the annual meeting of the Southern Society for Clinical Investigation. The award is given annually to a fellow or trainee for outstanding research.

Dr. Ali Shirkhoda, assistant professor of radiology, gave a lecture at George Washington University Hospital in Washington, D.C., Jan. 5, entitled, "Pitfalls in Abdominal CT Diagnosis."

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SURGEON — Assistant Professor of Surgery in a University teaching hospital; Board certified or qualified in general surgery; demonstrated competitive in teaching and general, trauma, transplantation and vascular surgery. Academic and scholarly productivity required for promotion. Keen interest in attracting outstanding woman and/or minority physician. Applicants should submit complete curriculum vitae to: Dr. George Johnson, Jr., Department of Surgery, 210 Clinical Sciences Building 229H, University of North Carolina, Chapel Hill, North Carolina 27514. THE UNIVERSITY OF NORTH CAROLINA IS AN EQUAL OPPORTUNITY/AFFIRMATIVE ACTION EMPLOYER.

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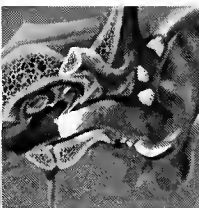
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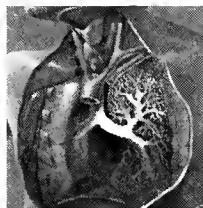
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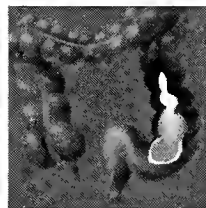
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Indications and Usage: For the treatment of urinary tract infections due to susceptible strains of the following organisms: *Escherichia coli*, *Klebsiella-Enterobacter*, *Proteus mirabilis*, *Proteus vulgaris*, *Proteus morganii*. It is recommended that initial episodes of uncomplicated urinary tract infections be treated with a single effective antibacterial agent rather than the combination. Note: The increasing frequency of resistant organisms limits the usefulness of all antibacterials, especially in these urinary tract infections.

For acute otitis media in children due to susceptible strains of *Haemophilus influenzae* or *Streptococcus pneumoniae* when in physician's judgment it offers an advantage over other antimicrobials. Limited clinical information presently available on effectiveness of treatment of otitis media with Bactrim when infection is due to ampicillin-resistant *Haemophilus influenzae*. To date, there are limited data on the safety of repeated use of Bactrim in children under two years of age. Bactrim is not indicated for prophylactic or prolonged administration in otitis media at any age.

For acute exacerbations of chronic bronchitis in adults due to susceptible strains of *Haemophilus influenzae* or *Streptococcus pneumoniae* when in physician's judgment it offers an advantage over a single antimicrobial agent.

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Contraindications: Hypersensitivity to trimethoprim or sulfonamides; patients with documented megaloblastic anemia due to folate deficiency; pregnancy at term; nursing mothers because sulfonamides are excreted in human milk and may cause kernicterus, infants less than 2 months of age.

Warnings: BACTRIM SHOULD NOT BE USED TO TREAT STREPTOCOCCAL PHARYNGITIS. Clinical studies show that patients with group A β -hemolytic streptococcal tonsillopharyngitis have higher incidence of bacteriologic failure when treated with Bactrim than do those treated with penicillin. Deaths from hypersensitivity reactions, agranulocytosis, aplastic anemia and other blood dyscrasias have been associated with sulfonamides. Experience with trimethoprim is much more limited but occasional interference with hematopoiesis has been reported as well as an increased incidence of thrombopenia with purpura in elderly patients on certain diuretics, primarily thiazides. Sore throat, fever, pallor, purpura or jaundice may be early signs of serious blood disorders. Frequent CBC's are recommended; therapy should be discontinued if a significantly reduced count of any formed blood element is noted.

Precautions: General: Use cautiously in patients with impaired renal or hepatic function, possible folate deficiency, severe allergy or bronchial asthma. In patients with glucose-6-phosphate dehydrogenase deficiency, hemolysis, frequently dose-related, may occur. During therapy, maintain adequate fluid intake and perform frequent urinalyses, with careful microscopic examination, and renal function tests, particularly where there is impaired renal function. Bactrim may prolong prothrombin time in those receiving warfarin; reassess coagulation time when administering Bactrim to these patients.

Pregnancy: Teratogenic Effects: Pregnancy Category C. Because trimethoprim and sulfamethoxazole may interfere with folic acid metabolism, use during pregnancy only if potential benefits justify the potential risk to the fetus.

Adverse Reactions: All major reactions to sulfonamides and trimethoprim are included, even if not reported with Bactrim. **Blood dyscrasias:** Agranulocytosis, aplastic anemia, megaloblastic anemia, thrombopenia, leukopenia, hemolytic anemia, purpura, hypoprothrombinemia and methemoglobinemia. **Allergic reactions:** Erythema

multiforme, Stevens-Johnson syndrome, generalized skin eruptions, epidermal necrolysis, urticaria, serum sickness, pruritus, exfoliative dermatitis, anaphylactoid reactions, periorbital edema, conjunctival and scleral injection, photosensitization, arthralgia and allergic myocarditis. **Gastrointestinal reactions:** Glossitis, stomatitis, nausea, emesis, abdominal pains, hepatitis, diarrhea and pancreatitis. **CNS reactions:** Headache, peripheral neuritis, mental depression, convulsions, ataxia, hallucinations, tinnitus, vertigo, insomnia, apathy, fatigue, muscle weakness and nervousness. **Miscellaneous reactions:** Drug fever, chills, toxic nephrosis with oliguria and anuria, perianteritis nodosa and L.E. phenomenon. Due to certain chemical similarities to some goitrogens, diuretics (acetazolamide, thiazides) and oral hypoglycemic agents, sulfonamides have caused rare instances of goiter production, diuresis and hypoglycemia in patients; cross-sensitivity with these agents may exist. In rats, long-term therapy with sulfonamides has produced thyroid malignancies.

Dosage: Not recommended for infants less than two months of age.

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Children: Recommended dosage for children with urinary tract infections or acute otitis media—8 mg/kg trimethoprim and 40 mg/kg sulfamethoxazole per 24 hours, in two divided doses for 10 days. Use identical daily dosage for 5 days for shigellosis.

For patients with renal impairment: Use recommended dosage regimen when creatinine clearance is above 30 ml/min. If creatinine clearance is between 15 and 30 ml/min, use one-half the usual regimen. Bactrim is not recommended if creatinine clearance is below 15 ml/min.

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1. Rubin RH, Swartz MN. *N Engl J Med* 303:426-432, Aug 21, 1980. 2. Data on file, Medical Department, Hoffmann-La Roche Inc.

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North Carolina

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Studies have confirmed the following applications for the Entero-Test:

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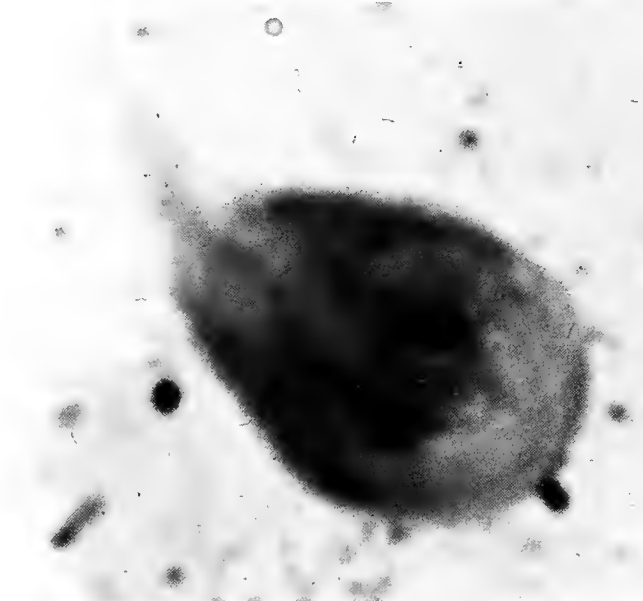
Those parasites that live primarily in the duodenum or bile ducts often are more readily seen in the duodenal contents than in the stool. These include *Giardia lamblia* (motile trophozoites), *Strongyloides stercoralis* larvae and/or eggs in advanced stages of development), *Clonorchis sinensis* (eggs), *Fasciola hepatica* (eggs), *Trichostrongylus orientalis* (eggs), and *Isospora* (coccidia).

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Chronic Diarrhea caused by anaerobic and aerobic bacteria in infants and children was easily identified using the Entero-Test. The string test was comparable to or better than duodenal aspirate in all cases.



Giardia lamblia

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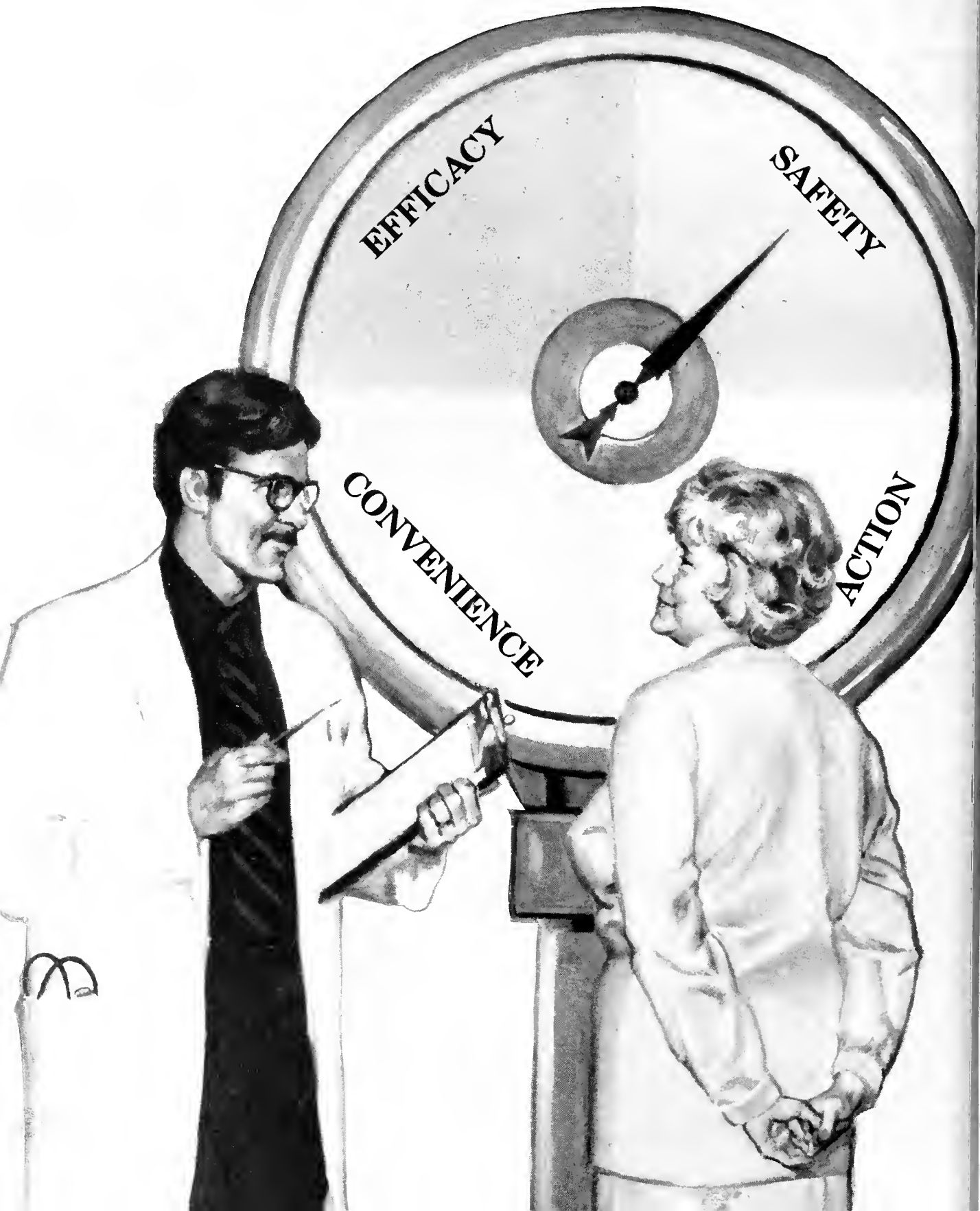
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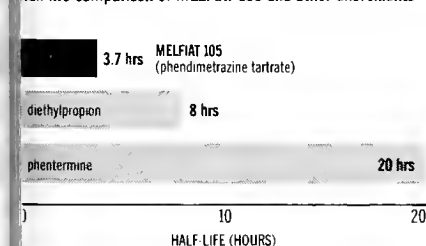


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INDICATIONS AND USAGE: Melfiat® 105 (phendimetrazine tartrate) is indicated in the management of exogenous obesity as a short-term adjunct (a few weeks) in a regimen of weight reduction based on caloric restriction. The limited usefulness of agents of this class (See CLINICAL PHARMACOLOGY) should be measured against possible risk factors inherent in their use such as those described below.

CONTRAINDICATIONS: Advanced arteriosclerosis, symptomatic cardiovascular disease, moderate to severe hypertension, hyperthyroidism, known hypersensitivity, or idiosyncrasy to the sympathomimetic amines, glaucoma. Agitated states. Patients with a history of drug abuse. During or within 14 days following the administration of monoamine oxidase inhibitors (hypertensive crises may result).

WARNINGS: Tolerance to the anorectic effect usually develops within a few weeks. When this occurs, the recommended dose should be discontinued. Phendimetrazine tartrate may impair the ability of the patient to engage in potentially hazardous activities such as operating machinery or driving a motor vehicle; the patient should therefore be cautioned accordingly.

Drug Dependence: Phendimetrazine tartrate is related chemically and pharmacologically to the amphetamines. Amphetamines and related stimulant drugs have been extensively abused, and the possibility of abuse of phendimetrazine tartrate should be kept in mind when evaluating the desirability of including a drug as part of a weight-reduction program. Abuse of amphetamines and related drugs may be associated with intense psychological dependence and severe social dysfunction. There are reports of patients who have increased the dosage to many times that recommended. Abrupt cessation following prolonged high-dosage administration results in extreme fatigue and mental depression; changes are also noted on the sleep EEG, manifestations of chronic intoxication with anorectic drugs include severe dermatoses, marked insomnia, irritability, hyperactivity, and personality changes. The most severe manifestation of chronic intoxication is psychosis, often clinically indistinguishable from schizophrenia.

USAGE IN PREGNANCY: The safety of phendimetrazine tartrate in pregnancy and lactation has not been established. Therefore, phendimetrazine tartrate should not be taken by women who are or may become pregnant.

USAGE IN CHILDREN: Phendimetrazine tartrate is not recommended for use in children under 12 years of age.

PRECAUTION: Caution is to be exercised in prescribing phendimetrazine tartrate for patients with even mild hypertension. Insulin requirements in diabetes mellitus may be altered in association with the use of phendimetrazine tartrate and the concomitant dietary regimen. Phendimetrazine tartrate may decrease the hypotensive effect of guanethidine. The least amount feasible should be prescribed or dispensed at one time in order to minimize the possibility of overdosage.

ADVERSE REACTIONS: Cardiovascular: Palpitation, tachycardia, elevation of blood pressure.

Central Nervous System: Overstimulation, restlessness, dizziness, insomnia, euphoria, dysphoria, tremor, headache; rarely psychotic episodes at recommended doses.

Gastrointestinal: Dryness of the mouth, unpleasant taste, diarrhea, constipation, other gastrointestinal disturbances.

Allergic: Urticaria.

Endocrine: Impotence, changes in libido.

OVERDOSAGE: Manifestations of acute overdosage with phendimetrazine tartrate include restlessness, tremor, hyperreflexia, rapid respiration, confusion, assaultiveness, hallucinations, panic states.

Fatigue and depression usually follow the central stimulation. Cardiovascular effects include arrhythmias, hypertension or hypotension and circulatory collapse. Gastrointestinal symptoms include nausea, vomiting, diarrhea, and abdominal cramps. Fatal poisoning usually terminates in convulsions and coma. Management of acute phendimetrazine tartrate intoxication is largely symptomatic and includes lavage and sedation with a barbiturate. Experience with hemodialysis or peritoneal dialysis is inadequate to permit recommendation in this regard. Acidification of the urine increases phendimetrazine tartrate excretion. Intravenous phentolamine (Regkine) has been suggested for possible acute, severe hypertension, if this complicates phendimetrazine tartrate overdosage.

DOSAGE AND ADMINISTRATION: Since Melfiat® 105 (phendimetrazine tartrate) 105 mg is a sustained-release dosage form, limit to one sustained-release capsule in the morning. Melfiat® 105 (phendimetrazine tartrate) is not recommended for use in children under 12 years of age.

HOW SUPPLIED: Each orange and clear sustained-release capsule contains 105 mg phendimetrazine tartrate in bottles of 100.

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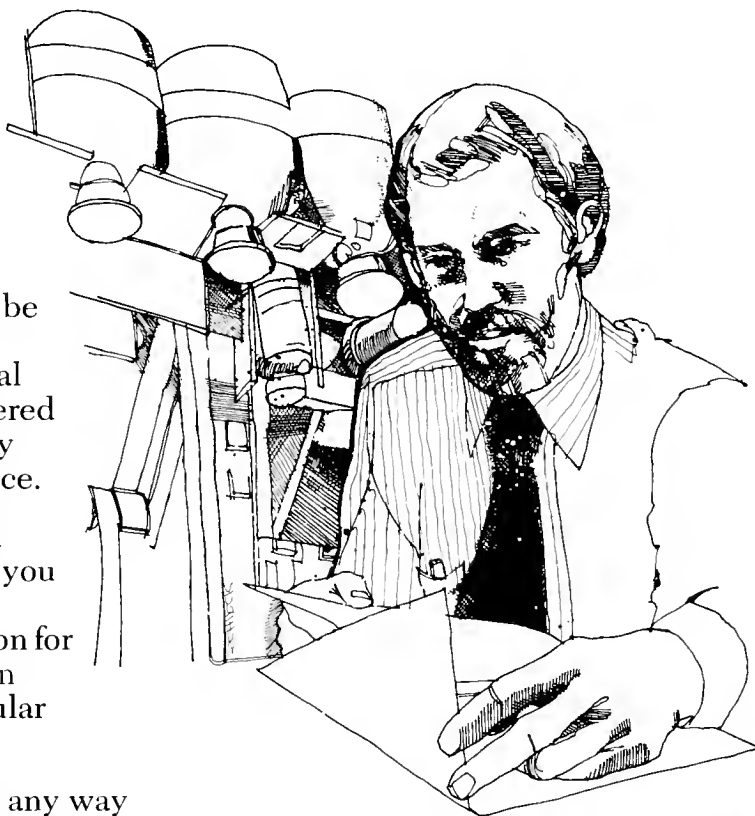
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An added complication... in the treatment of bacterial bronchitis*



Brief Summary.

Consult the package literature for prescribing information.

Indications and Usage: Ceclor* (cefaclor, Lilly) is indicated in the treatment of the following infections when caused by susceptible strains of the designated microorganisms:

Lower respiratory infections, including pneumonia caused by *Streptococcus pneumoniae* (*Diphlococcus pneumoniae*), *Haemophilus influenzae*, and *S. pyogenes* (group A beta-hemolytic streptococci).

Appropriate culture and susceptibility studies should be performed to determine susceptibility of the causative organism to Ceclor.

Contraindication: Ceclor is contraindicated in patients with known allergy to the cephalosporin group of antibiotics.

Warnings: IN PENICILLIN SENSITIVE PATIENTS, CEPHALOSPORIN ANTIBIOTICS SHOULD BE ADMINISTERED CAUTIOUSLY. THERE IS CLINICAL AND LABORATORY EVIDENCE OF PARTIAL CROSS-ALLERGENICITY OF THE PENICILLINS AND THE CEPHALOSPORINS, AND THERE ARE INSTANCES IN WHICH PATIENTS HAVE HAD REACTIONS, INCLUDING ANAPHYLAXIS, TO BOTH DRUG CLASSES.

Antibiotics, including Ceclor, should be administered cautiously to any patient who has demonstrated some form of allergy, particularly to drugs.

Precautions: If an allergic reaction to cefaclor occurs, the drug should be discontinued, and, if necessary, the patient should be treated with appropriate agents, e.g., pressor amines, antihistamines, or corticosteroids.

Prolonged use of cefaclor may result in the overgrowth of nonsusceptible organisms. Careful observation of the patient is essential. If superinfection occurs during therapy, appropriate measures should be taken.

Positive direct Coombs tests have been reported during treatment with the cephalosporin antibiotics. In hematologic studies or in transfusion cross-matching procedures when antiglobulin tests are performed on the minor side or in Coomb testing of newborns whose mothers have received cephalosporin antibiotics before parturition, it should be recognized that a positive Coombs test may be due to the drug.

Ceclor should be administered with caution in the presence of markedly impaired renal function. Under such a condition, careful clinical observation and laboratory studies should be made because safe dosage may be lower than that usually recommended.

As a result of administration of Ceclor, a false-positive reaction for glucose in the urine may occur. This has been observed with Benedict's and Fehling's solutions and also with Clinistest* tablets but not with Tes-Tape* (Glucose Enzymatic Test Strip, USP, Lilly).

Usage in Pregnancy: Although no teratogenic or antifertility effects were seen in reproduction studies in mice and rats receiving up to 12 times the maximum human dose or in ferrets given three times the maximum human dose, the safety of this drug for use in human pregnancy has not been established. The benefits of the drug in pregnant women should be weighed against a possible risk to the fetus.

Usage in Infancy: Safety of this product for use in infants less than one month of age has not been established.

Adverse Reactions: Adverse effects considered related to cefaclor therapy are uncommon and are listed below.

Gastrointestinal symptoms occur in about 2.5 percent of patients and include diarrhea (1 in 70) and nausea and vomiting (1 in 90).

As with other broad-spectrum antibiotics, colitis, including rare instances of pseudomembranous colitis, has been reported in conjunction with therapy with Ceclor.

Hypersensitivity reactions have been reported in about 1.5

Some ampicillin-resistant strains of *Haemophilus influenzae*—a recognized complication of bacterial bronchitis*—are sensitive to treatment with Ceclor.¹⁻⁶

In clinical trials, patients with bacterial bronchitis due to susceptible strains of *Streptococcus pneumoniae*, *H. influenzae*, *S. pyogenes* (group A beta-hemolytic streptococci), or multiple organisms achieved a satisfactory clinical response with Ceclor.⁷

Ceclor®

cefaclor

Pulvules®, 250 and 500 mg

percent of patients and include morbilliform eruptions (1 in 100). Pruritus, urticaria, and positive Coombs tests each occur in less than 1 in 200 patients. Cases of serum-sickness-like reactions (erythema multiforme or the above skin manifestations accompanied by arthritis/arthritis, frequently, fever) have been reported. These reactions are apparently due to hypersensitivity and have usually occurred during or following a second course of therapy with Ceclor* (cefaclor). Such reactions have been reported more frequently in children than in adults. Signs and symptoms usually occur a few days after initiation of therapy and subside within a few days after cessation of therapy. No serious sequelae have been reported. Antihistamines and corticosteroids appear to enhance resolution of the syndrome.

Cases of anaphylaxis have been reported, half of which have occurred in patients with a history of penicillin allergy.

Other effects considered related to therapy included eosinophilia (1 in 50 patients) and genital pruritus or vaginitis (less than 1 in 100 patients).

Causal Relationship Uncertain: Transitory abnormalities in clinical laboratory test results have been reported. Although they were of uncertain etiology, they are listed below to serve as alerting information for the physician.

Hepatic: Slight elevations in SGOT, SGPT, or alkaline phosphatase values (1 in 40).

Hematopoietic: Transient fluctuations in leukocyte count, predominantly lymphocytosis occurring in infants and young children (1 in 40).

Renal: Slight elevations in BUN or serum creatinine (less than 1 in 500) or abnormal urinalysis (less than 1 in 200). (100261R)

*Many authorities attribute acute infectious exacerbation of chronic bronchitis to either *S. pneumoniae* or *H. influenzae*.

Note: Ceclor is contraindicated in patients with known allergy to the cephalosporins and should be given cautiously to penicillin-allergic patients.

Penicillin is the usual drug of choice in the treatment and prevention of streptococcal infections, including the prophylaxis of rheumatic fever. See prescribing information.

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Additional information available to the profession on request from Eli Lilly and Company, Indianapolis, Indiana 46285
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	Whipworm	Common Roundworm	Hookworm	Pinworm
cure rates				
mean	68%	98%	96%	95%
(range)	(61-75%)	(91-100%)	—	(90-100%)
egg reduction				
mean	93%	99.7%	99.9%	—
(range)	(70-99%)	(99.5%-100%)	—	—

CONTRAINDICATIONS VERMOX is contraindicated in pregnant women (see Pregnancy Precautions) and in persons who have shown hypersensitivity to the drug.

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PEDIATRIC USE: The drug has not been extensively studied in children under two years; therefore, in the treatment of children under two years the relative benefit/risk should be considered.

ADVERSE REACTIONS Transient symptoms of abdominal pain and diarrhea have occurred in cases of massive infection and expulsion of worms.

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HOW SUPPLIED VERMOX is available as chewable tablets, each containing 100 mg of mebendazole, and is supplied in boxes of twelve tablets. VERMOX (mebendazole) is an original product of Janssen Pharmaceutica, Belgium.

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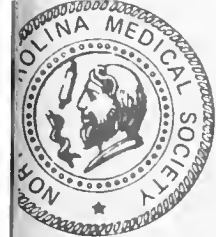
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PRESIDENT'S NEWSLETTER

NORTH CAROLINA MEDICAL SOCIETY

NO. 12

MAY 1982

Dear Colleagues:

Another Annual Meeting is over and another busy year has drawn to a close. Fatigue from long hours of deliberation and scientific programs (maybe, a little libation?) was demonstrated clearly as 700 bedraggled physicians departed Pinehurst on Sunday.

A great deal was accomplished--as painstaking and tedious as the democratic process may be. Because of Federal Trade Commission complications, the North Carolina Medical Society charge to its Blue Shield Committee has been changed to eliminate adjudication of fees. A resolution that this committee be replaced by a new Committee on Medical Diagnoses and Management was referred back to the Executive Council for further study.

A resolution which would make Past-Presidents ineligible for service as a member of the Committee on Nominations was defeated. However, in an effort to give the membership more participation in the election of the Society's leadership, Davidson County's amended Resolution 17 was adopted. This resolution provides for publication of the nominated slate of officers at least 60 days prior to the Annual May Meeting of the House of Delegates. This action will allow County Societies to "consider the nominations and instruct their delegates prior to the election in the House of Delegates".

After lengthy discussion concerning the North Carolina Medical Journal, the report of the ad hoc Committee on its evaluation was approved. The report stated that the Journal has improved and should be continued. Within twelve months, we expect to have a more efficient Department of Communications with a professional director. The Journal will then be in the Department of Communications and will be re-evaluated with a report to the 1984 House of Delegates.

The 1982 Budget, proposed by the Committee on Finance, was approved and with it the proposed dues increase. The Executive Council was "authorized to proceed, in its discretion, with the construction of one or two additional floors to the existing headquarters building" and to acquire additional land for parking, if necessary. The Executive Council was also "authorized to use, in its discretion, the tenancy in common arrangement for the addition to the headquarters building.

Pitt County's Resolution 5 addresses their concern that much of the quality of patient care rendered in mental health community programs is deficient and substandard. They question the amount of time devoted by the medical or clinical director to treatment of patients, the rate of turnover of the qualified mental health professionals, the cost of an hour of therapy and independent, valid audits of each local program. On April 8, 1982, a guest article in the News and Observer by Richard H. Williams, Ph.D., a consultant to the National Institute of Mental Health, addressed these same concerns. Pitt County's resolution was referred to the Executive Council for further study and evaluation. The Executive Council will report the findings of this study to the 1983 House of Delegates. In like manner, the House adopted amended Report E concerning proper psychiatric care of prisoners suffering from psychiatric illness during their

incarceration,, as well as follow-up care upon their release from prison. Appropriate State Agencies are requested to provide adequate resources and to develop methods of delivering services including care management.

Attached to the previous PRESIDENT'S NEWSLETTER were the four reports generated by the ad hoc Committee to Consider a Statewide Medicaid Reimbursement Fee Schedule for Physicians. Three of these reports (A, B, and D) concerned the importance of private physician participation in the Medicaid Program, recommendation for reimbursement and cost containment. All three reports were adopted by the House. Report C was a description of the Michigan "Physician Primary Sponsor Plan," a gate-keeper program for Medicaid. A guest of the Division of Medical Assistance of the Department of Human Resources, Ms. Sherry Wellman, author of the Michigan Plan testified before the Reference Committee to discuss it and to respond to questions. Report C was filed as information by the House. We are indebted to Secretary Sarah Morrow and Medicaid Director Barbara D. Matula for their efforts to keep our membership informed on matters pertaining to the Medicaid Program.


Report K, generated by the ad hoc Committee on North Carolina's Right to Natural Death Statutes, stressed the optional nature of the procedure for entry of a 'no code' order. It was amended to further state: "The procedure is entirely optional and makes nothing that was legal before its enactment illegal, but rather provides an alternative that maybe followed in order to minimize liability exposure for situations involving withholding or discontinuing life supports including 'no code' situations." The Society is to make every effort to communicate the optional nature of the act to hospital administrators, nursing groups and other health professionals

Many County Societies submitted resolutions concerning drunken driving and recognition of alcoholism as a disease. The House adopted a substitute resolution in lieu of the several motions submitted. The substitute motion urges the North Carolina Legislature to recognize alcoholism as a disease and evaluate those drivers arrested for DUI for appropriate treatment. The Legislature and the State Judiciary are urged to "take whatever measures necessary to remove the drunken driver from our highways and protect our citizens".

I have had a marvelous time being your President. I have many new friends--and--I hope very few enemies. The warm satisfaction of having you choose me as your President will stay with me for the rest of my years! For that I shall, forever be grateful! I know that each of you will give our new President, Marshall S. Redding, the same wonderful cooperation and friendship shown me. And now ---

I close my book of memory
For what is written there
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My best wishes for you and your family!


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Clinical Diagnosis of Anterior Cruciate Ligament Instability

Gregory Mencia, M.D., and Frank H. Bassett, III, M.D.

ABSTRACT The anterior cruciate ligament is a commonly disrupted structure in the traumatized knee. The function of the intact ligament and the clinical significance of its rupture have long been debated. For years, the anterior drawer sign has been synonymous with anterior cruciate instability. More recently, the various tests for anterolateral rotatory instability have proven to be clinically dependable in diagnosing tears of this ligament. These newer tests and their more well-known predecessor are described, and their role in the overall assessment of the condition of the anterior cruciate ligament in the injured knee is discussed.

IN 1941 Brantigan and Voshell reviewed the vast literature concerning the movements and function of the knee joint ligaments.¹ Although much has been learned of the structure and biomechanical function of the joint since then, there is still considerable difference of opinion about certain aspects of this subject.

The role of the anterior cruciate ligament as a stabilizing structure in the intact knee and its contribution to instability following rupture in the traumatized joint remains one such controversy. Allman considers that although the initial disability of anterior cruciate ligament insufficiency is often minimal, it usually marks the beginning of the end of the knee.² Hughston disagrees, believing instead that the most common manifestation of a torn anterior cruciate ligament is a functionally insignificant increase in recurvatum.^{3,4}

In contrast to the controversy over function, it seems undebatable that the number of anterior cruciate ligament tears, either complete or partial, isolated or combined with

other lesions, is significantly high, especially in athletic trauma.² In Torg's series of 250 surgical knees, the anterior cruciate ligament was the second most frequently damaged structure.⁵ Others have reported similar findings.⁶⁻¹¹

Most agree that an accurate diagnosis of anterior cruciate ligament disruption must be made. Few, however, are as enthusiastic as Torg, who states that "an understanding of the majority of traumatic knee problems begins with the knowledge of the status of the anterior cruciate ligament."⁵

This paper is concerned with the clinical diagnosis of anterior cruciate ligament instability. Particular emphasis will be placed on the various clinical tests and maneuvers currently employed. The goal is to present a framework for a logical approach to assess this problem.

Clearly, it would be ideal to be present at the time of injury and to examine the patient immediately and later in clinic. Short of this, one has to rely on an accurate history and astute physical examination, while maintaining a high level of suspicion.

Several essential historical elements should lead one to consider cruciate ligament derangement. Most commonly elicited symptoms in-

clude: a "pop" at the time of injury, gross swelling due to hemorrhage immediately, and maximal hemarthrosis at 12 hours.⁹ In Marshall's series of acute knee ligament injuries, 90% of patients who gave a history of hearing or feeling a "pop" had anterior ligament rupture;² and in Erickson's study, the most common reason for acute hemarthrosis of the knee was injury to the anterior cruciate ligament.¹² The mechanism of injury, as described by the patient or an observer, is usually one of sudden deceleration and change in the direction of running, resulting in internal tibial rotation on the femur and valgus stress on the knee. A history of pain is, surprisingly, variable as is location of pain. It may present posterolaterally, anteromedially, or deep within the center of the knee.

In the case of chronic anterior cruciate ligament laxity, patients commonly complain of the knee "giving way," and describe the feeling of one bone slipping forward on the other.

ANTERIOR DRAWER SIGN

The gold standard for diagnosing anterior cruciate ligament instability has been the anterior drawer sign. Palmer originally described the maneuver used to elicit this sign

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Reprint requests to Dr. Bassett

in 1938 as follows: "With the patient lying down or sitting up, the examiner should grasp the lower leg just beneath the knee joint and, with the foot between his knees or upper arm and trunk, attempt to move the lower leg backwards and forwards."¹³ The test is considered positive if there is excessive, asymmetric anterior distraction of the tibia on the femur. Although somewhat vaguely defined, the test has been, with few exceptions, widely accepted through the years.

The current modification of the original test is much more precise (Figure 1). The test is interpreted in the same manner as described above, but with particular attention to the presence of a "soft" end point.¹⁴

A feel for the anatomy of the anterior cruciate ligament helps in understanding the interpretation of this test. The anterior cruciate is a complex, two-part structure, consisting of a narrow medial band and a broader lateral part, connected throughout their length by fibrous connective tissue which permits differential movement of the structures. The ligament is attached above to the posterior aspect of the lateral femoral condyle and courses downward, forward and inward to insert in a wide, depressed area in front of the anterior fibial spine.^{2,15}

The two parts of the ligament have different restraining effects which

vary with the position of the knee. The anteromedial band is tightest in flexion and is thought to be the prime check against anterior displacement of the tibia. The posterolateral band, conversely, is thought to be lax in flexion and taut in extension and to function primarily in preventing hyperextension of the knee and only secondarily in checking against anterior instability.¹⁶

Proponents of the anterior drawer test claim that a positive sign is unobtainable unless the anterior cruciate is at least partially torn. Marshall categorically states that "a positive drawer sign is indicative of injury to the anterior cruciate ligament. There can be no anterior drawer sign, regardless of any other concomitant ligament injury, unless a portion of the anterior cruciate ligament is torn."¹⁴

In support of this, he cites his series of surgically documented anterior cruciate ligament injuries in which more than 90% of the knees had a demonstrable anterior drawer sign preoperatively.^{2,16} Girgis and colleagues demonstrated that selective cutting of the anterior cruciate ligament in cadaveric and fresh human knees led to a positive drawer sign in flexion and extension.¹⁵ Wang and Marshall described a patient with a negative anterior drawer in the presence of lesions of both collateral ligaments, the posterior cruciate, and the posterolateral part of the anterior cruciate. Experimental severing of the same structures in cadaveric knees yielded similar results leading the authors to conclude that it is the anteromedial band of the anterior cruciate which primarily is responsible for anterior stability of the knee.¹⁶

TESTS FOR ROTARY INSTABILITY

Torg expressed his skepticism of the reliability of the anterior drawer test, pointing out that the test is often falsely negative due to various factors: tenseness of the knee as a result of hemarthrosis with reactive synovitis, protective muscle spasm, or mechanical blocking by a torn posterior horn of the medial meniscus. He thinks these problems can be circumvented if the knee is ex-

amined in extension. He calls this modification of the drawer test the Lachman test.⁵

This examination is performed with the patient supine and the involved leg elevated and held with the knee positioned between full extension and 15 degrees of flexion. The femur is stabilized with one hand while firm pressure is applied to the posterior aspect of the proximal tibia with the other. A positive test is described by anterior displacement of the tibia and a "soft" end point.⁵

Torg cites impressive data in support of the predictive value of this test in the presence of anterior cruciate ligament instability. In his series, there were no false positives and only five false negatives elicited, among 93 knees that were found surgically to have tears of the anterior cruciate ligament. By comparison, the anterior drawer sign was falsely negative in 42 of these same 93 knees and equivocal in another 14.⁵

Contrary to the more traditional interpretation, Hughston has found no evidence that the condition of the anterior cruciate has any correlation with a positive anterior drawer sign. As stated previously, he feels that the major function of the anterior cruciate is the prevention of hyperextension. Furthermore, he contends that a positive drawer sign

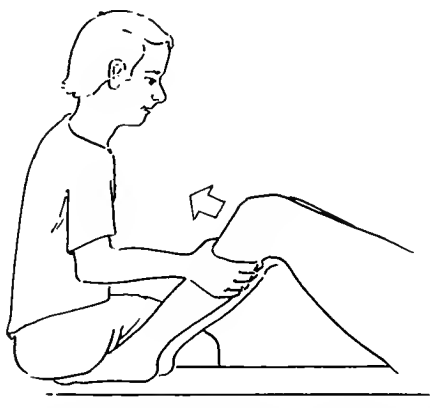


Fig. 1. Anterior instability of the knee is checked with the patient supine, hip flexed 45 degrees, knee flexed 90 degrees with the tibia in neutral rotation, and the foot planted in a weight bearing position. The examiner sits on the patient's foot to stabilize it, ensures laxity of the hamstring muscles, and then firmly checks the anterior mobility of the proximal tibia on the affected side and on the contralateral side for comparison.



Fig. 2. Technique of eliciting the "lateral pivot shift" as described by MacIntosh. This test is done with the patient supine and relaxed. The knee is extended, the leg elevated, and the tibia internally rotated. In this position the lateral tibial plateau will begin to subluxate forward in the presence of instability. As more valgus stress is applied to the knee, the tibia further displaces forward. As the knee is then slowly flexed, spontaneous reduction (the pivot point) occurs at 30-40 degrees of bending.

is actually a manifestation of so-called rotatory instability and due primarily to a tear of one of the capsular ligaments, not the anterior cruciate. He advocates that the anterior drawer test be performed as described above with the patient supine, knee and hip flexed, and foot planted, but also with the tibia in external and internal, as well as, neutral rotation and that the findings be reported as anterolateral, anteromedial, or just anterior instability (in the case that the two types of rotatory instability occur simultaneously).^{3,4}

Slocum and Larson actually first introduced the concept of rotatory instability in 1968.¹⁷ Since then, several varieties of this type of instability have been described. In 1962, Galway and MacIntosh coined the term "pivot shift" to describe the syndrome of anterolateral rotatory instability, that is anterior subluxation of the lateral tibial plateau and internal tibial torsion.^{18,19} Contrary to Hughston, they believed the basic responsible lesion to be rupture of the anterior cruciate ligament and proposed a test to assess this instability. Various modifications of the MacIntosh test (as the original came to be called) have been described:

The MacIntosh (pivot shift) test is done with the patient supine and relaxed. The knee is extended, the leg elevated, and the tibia internally rotated. In this position the lateral tibial plateau will begin to subluxate forward in the presence of instability. As more valgus stress is applied to the knee, the tibia further displaces forward. As the knee is then slowly flexed, spontaneous reduc-

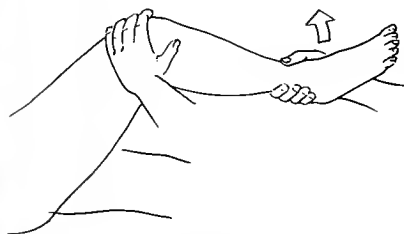


Fig. 3. The Losee test is also performed on the supine, relaxed patient. The knee and hip are bent to 45-50 degrees of flexion with the tibia externally rotated. The knee is then slowly extended while a valgus force is applied. If the test is positive, there is sudden subluxation of the lateral tibial plateau just prior to full extension.

tion (the pivot point) occurs at 30-40 degrees of bending (Figure 2).¹⁸⁻²¹

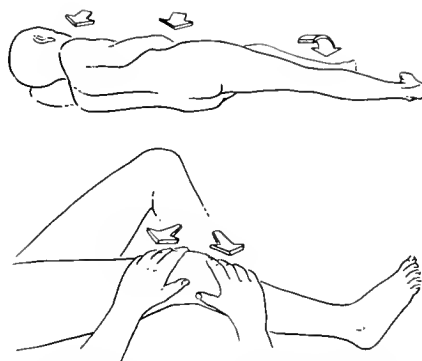
The Losee test is also performed on the supine, relaxed patient (Figure 3). The knee and hip are bent to 45-50 degrees of flexion with the tibia externally rotated. The knee is then slowly extended while a valgus force is applied. If the test is positive, there is sudden subluxation of the lateral tibial plateau just prior to full extension.^{14,20}

The Slocum test for anterolateral rotatory instability is done with the patient lying on his unaffected side so that the hip and knee of the normal limb are out of the way. The patient then rolls his pelvis to a position approximately 30 degrees from the examining table. In this position, the knee is in a valgus position, and the tibia is rotated internally (Figures 4 and 5). The examiner places both hands on the lateral aspect of the injured joint and assists the patient as he slowly flexes the knee. In a positive test, anterior subluxation of the lateral tibial plateau is felt at about 10 degrees of bending followed by sudden reduction as further flexion is achieved.^{14,20}

The "jerk test" advocated by Hughston is done with the patient supine, the knee flexed to 90 degrees and the hip to 45 degrees, and the tibia internally rotated. The knee is slowly extended as valgus stress is applied. A positive test is indicated by reduction in flexion, slight subluxation with extension, and relocation in full extension.^{3,4,14}

The data correlating the association of anterolateral instability, as demonstrated clinically by one or more of the aforementioned tests, with anterior cruciate ligament injury is convincing. All 45 patients in Slocum's series who were found clinically to have anterolateral instability had lesions of their anterior cruciates at arthrotomy.²¹ In Losee's, of 84 patients with a positive clinical test, 37 eventually required surgery, and all had anterior cruciate ruptures.²⁰ Kennedy's 52 subjects likewise showed 100% correlation between a positive clinical examination for anterolateral instability and a torn anterior cruciate at surgery.¹⁴

It is unfortunate that Hughston's data casts doubt on what otherwise



Figs. 4 & 5. The Slocum Test. The examiner places both hands on the lateral aspect of the injured joint and assists the patient as he slowly flexes the knee. In a positive test, anterior subluxation of the lateral tibial plateau is felt at about 10 degrees of bending followed by sudden reduction as further flexion is achieved.

would appear to be remarkably consistent findings. In his series of 228 cases of surgically-documented tears, he found that only 15.3% were associated with anterolateral or combined anterolateral/anteromedial instability. He believes that the primary lesion responsible for this type of instability is a tear of the middle third of the capsular ligament and points out that a coexistent tear of the anterior cruciate ligament will significantly augment a positive clinical sign of anterolateral instability.²⁻⁴

DISCUSSION

In spite of the controversy, we are of the opinion that anterior cruciate ligament instability is a common clinical entity that can lead to significant functional impairment and, therefore, warrants consideration. In this paper we have attempted to present a logical approach to diagnosing this problem clinically.

The clinician must approach the patient with an injured knee with a high index of suspicion, cognizant of the fact that the anterior cruciate is one of the most vulnerable supporting structures in the knee. It is frequently damaged in athletic injuries, and tears of the anterior cruciate should be looked for in conjunction with injury to other joint structures, especially the medial meniscus.

The history is often classic. Roughly 90% of patients reportedly

hear a "pop" at the time of injury. The mechanism of injury usually described is one of valgus stress and internal tibial rotation, deceleration, and change of direction. Hemiarthrosis, manifested by swelling and stiffness, follows acutely and becomes maximal at approximately 12 hours. Pain is not a consistently elicited symptom.

On physical exam, it is our opinion that the demonstration of anterolateral rotatory instability, with or without a demonstrable anterior drawer sign, is a reliable indication of anterior cruciate damage and correlates with surgical findings of the same. Furthermore, the tests described in this paper all have excellent predictive value and the clinician's decision to use one over another or in combination with others

should be strictly a matter of preference. Adjunctive procedures such as a single or double contrast arthrography, examination under anesthesia, and arthroscopy are of proven value in confirming the clinical impression.

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An hypothesis consists in the imagination of a cause which is supposed to intervene between the real cause, and that perceived by the senses. When a person, after being exposed to marshy exhalation, is taken with an intermittent, he is first affected with a chill, in which the skin is corrugated on its whole surface. The marshy exhalation, and the constricted state of the skin, are the two first links of the chain of causes, which characterize fever, as perceived by the senses. Cullen, obeying the overweening propensity of the imagination, which attempts to satisfy itself by the invention of more satisfactory modes of explanation, attributed this state of the skin to a spasm of its fibres. Here then the hypothesis consists in the spasm, which intervenes between the miasmata and the chilly state, and which, though entirely fictitious, is said to be the cause of the latter. This hypothesis satisfied the celebrated professor and his pupils, till its novelty wore away, and the excitability of Dr. Brown, a more agreeable supposition, alike recommended by its novelty and unsubstantiated by fact, drove it from the field; the same may be said of almost every other medical hypothesis. — *Elements of the Theory and Practice of Physic*, by George Gregory, M.D., with notes and additions, adapted to the Practice of the United States, by Nathaniel Potter, M.D., and S. Colhoun, M.D., Vol. I, Philadelphia, Towar & Hogan, 1829.

Fine-Needle Aspiration Biopsy in Gynecologic Oncology

Clarence L. Wilson, II, M.D., and John L. Currie, M.D.

ABSTRACT Fine-needle aspiration biopsy has regained popularity as a definitive and relatively simple technique, and is a vital part of the diagnostic armamentarium in gynecologic oncology. Indications, contraindications, clinical techniques and applications of this method are discussed, and four case histories are presented to illustrate the accuracy and ease with which this technique can be used by physicians at all levels of training. Properly performed fine-needle aspiration may virtually replace most other diagnostic biopsy techniques.

THE use of a small gauge needle and syringe to aspirate cells from a suspicious malignancy has recently regained popularity as a major diagnostic tool. Although Ellis and Stuart introduced fine-needle aspiration biopsy in the United States in the 1930s and it was subsequently popularized in the 1960s by Franzen, Zagicek and Soderstrom in Scandinavia,¹ the availability of precise imaging techniques, such as computerized axial tomography (CAT) and ultrasound, have contributed to a revival of this procedure in the United States.

Fine-needle biopsy is distinctly different from other needle biopsy techniques. Vim-Silverman, Menghini and "Tru-Cut,"* are large bore needles which actually allow a tissue biopsy rather than obtaining a cytologic specimen. These large bore (12 to 18 gauge) needles have stylets and such devices as a double pronged cutter, or sharpened notch to remove a core of tissue for histologic examination. Although these represent an attractive alternative to open surgical biopsy, fine-needle aspiration has been shown to be an

even further refinement of needle biopsy techniques, requiring little equipment and minimal experience. Such a skinny needle technique, when properly performed, provides a generous bolus of malignant cells, sufficient for accurate cytologic confirmation of the presence of cancer.

This communication describes the indications, contraindications and actual technique of fine-needle biopsy. Four cases are presented to illustrate the usefulness of this tool on a busy gynecological oncology service at North Carolina Memorial Hospital.

Indications

The indications for fine-needle aspiration biopsy in gynecology are summarized in Table I. In general, any palpable mass suspicious for

malignancy can be sampled. Recurrent cancer following chemotherapy, radiation, or surgery also can be detected by aspiration of localized lesions. Enlarged lymph nodes or subcutaneous nodules in patients are easily sampled in order to diagnose metastatic malignancy at distant sites. The transcutaneous, transvaginal, or transrectal approach may be employed for pelvic masses.^{2,3,4}

Contraindications

There are few definitive contraindications to fine-needle aspiration biopsy. In patients with a known coagulopathy, fine-needle biopsy should be done only with extreme caution. However, the risk of open biopsy or large bore needle biopsy would certainly be greater, and the need for a definitive diagnosis usually outweighs the risk of bleeding complications. In patients undergoing chemotherapy, careful attention should be given to platelet counts in order to avoid bleeding secondary to needle biopsy. Thus, although coagulopathy is a theoretical contraindication, clinical judgment might mandate careful skinny needle aspiration.

Acute or chronic pelvic inflammatory disease, especially in the presence of abscess, is a contraindication to needle biopsy. Quiescent pelvic inflammatory disease can

Table I. Indications for Fine-Needle Aspiration Biopsy

Pelvic Mass Suspicious for Malignancy.

1. Primary — only if ovarian mass not suspected.
2. Recurrent — after chemotherapy, radiation, or surgery.

Masses Suspicious of Metastatic Malignancy

1. Enlarged lymph nodes.
2. Subcutaneous nodules.
3. Palpable abdominal masses.

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*"Tru-Cut," Travenol Laboratories, Inc., Deerfield, Ill.

flare up following instrumentation, and active disease can be exacerbated. Organomegaly adjacent to the suspected lesion could be considered a relative contraindication to a skinny needle biopsy.

Concern that seeding of the needle tract with tumor cells will occur secondary to needle biopsy cannot be supported. In more than 2,500 fine-needle aspiration biopsies performed at Toronto General Hospital, no evidence of seeding or tumor dissemination was reported.³ On the other hand, leakage from puncture of mobile ovarian tumors with tumor cell implantation is a more dangerous possibility.⁴ Thus, undiagnosed mobile or cystic masses, suggestive of an early ovarian neoplasm, should *never* be subjected to any blind biopsy procedure.

Contraindications are summarized in Table II.

Technique

The actual technique of fine-needle aspiration biopsy is simple. Although Scandinavian workers^{2,4} have developed a special apparatus for skinny needle biopsy, ordinary plastic syringes and standard needles which are readily available provide good results without the added cost of special equipment. The needle, usually 20 or 22 gauge, is locked onto a 10 to 20 cc syringe. The length of the needle depends on the approach to the involved site. A 1½ inch needle is very suitable for transcutaneous biopsies, while a 3-inch spinal, or even a 6-inch pudendal needle may be necessary for the transvaginal or transrectal approach. Often an Iowa trumpet guide is helpful in reaching lesions high in the vagina, or amputation of the plastic sheath of a spinal needle can provide an adequate guide. Local anes-



Fig. 1. Fine needle aspiration of a suspicious lymph node in the groin. The mass is immobilized and the needle is thrust sharply into its center. During entry into the mass *no negative pressure* should be applied to the syringe. For a lesion in the pelvis, the transvaginal and transrectal approach can be used, with the needle guided by the operator's finger or Iowa trumpet.

thesia may precede needle insertion depending on the site of the lesion, but is usually not necessary.

The suspicious mass is localized and the insertion site is prepped with an antiseptic solution. With *no* negative pressure on the syringe barrel, the needle is inserted into the mass (Figure 1). Negative pressure is then maintained while the needle is oscillated inside the lesion in several directions (Figure 2). The negative pressure *must be* released prior to needle removal from the interior of the mass.

The aspirated cellular material is forced out of the needle onto one or more glass slides and *immediately* fixed (Figure 3). Although our cytologists prefer "Pro-Fixx,"* (2-propanol 68.5%, 2-propane 17.1%, and polyethylene glycol 6.9%), a less complex solution of 95% ethanol has been found to be satisfactory by others.⁵ The slides are then stained by the routine Papanicolaou method and interpreted by a cytopathologist with special interest in this technique.

If sufficient cellular material has been obtained, or if a second aspiration is done, the specimen can be flushed into a small container of normal saline. The suspension can be centrifuged in the laboratory and a cell block preparation stained for

further delineation of cellular features.

The aspirated material may contain various normal epithelial and mesenchymal elements, depending on the sampling route. A clear patient history and aspiration sampling site localization should always be indicated on the cytology requisition to facilitate interpretation. Often, necrotic debris may accompany malignant elements in the sample to further challenge the cytologist.⁵

Specimens may be unsatisfactory for several reasons. The most common problem is drying of cells on the slide with poor preservation of cellular detail because of inadequate or slow fixation. Error can easily be introduced by applying excessive negative pressure to the syringe before insertion or after withdrawal of the needle; this in-

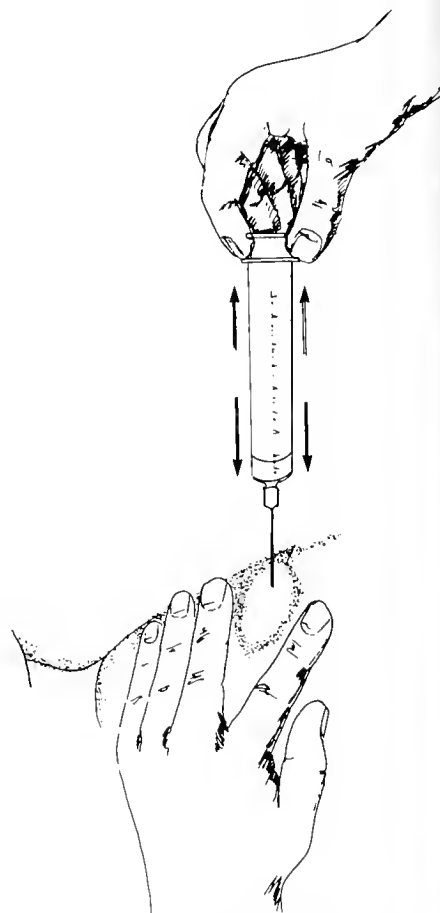


Fig. 2. Once the needle is in the approximate center of the mass, negative pressure is applied to the plunger of the syringe, and the needle is oscillated inside the lesion for 2-3 mm in all directions. Negative pressure *must be* released prior to removal of the needle from the lesion to avoid contamination.

Table II. Contraindications to Fine-Needle Aspiration Biopsy

Relative

1. Coagulopathy.
2. Adjacent organomegaly.

Absolute

1. Acute or chronic PID.
2. Undiagnosed mobile or cystic ovarian mass.

"Pro-Fixx," Scientific Products, McGraw Park, Ill.

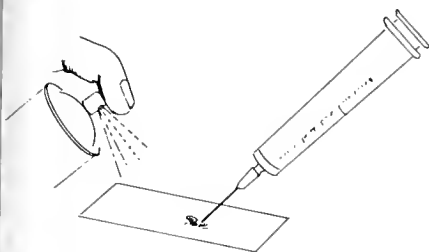


Fig. 3. As soon as the needle is withdrawn, the aspirated material is expelled onto a common glass slide, and immediately fixed. Allowing the slide to dry even for a few seconds may alter diagnostic sharpness of cells in the preparation. The slide is stained and interpreted by the cytopathologist.

corporate normal squamous cells or other elements present in the needle tract. Also, inadequate negative pressure while actually in the lesion or poor oscillation during sampling may give poor results.⁶

CASE STUDIES

Case 1

A 50-year-old white female was treated with 5,000 rads externally to the whole pelvis, 48-hour intracavitary cesium, and a sidewall boost to 6,000 rads after diagnosis in April 1980 of a moderately differentiated squamous cell carcinoma of the cervix, Stage II-B. Follow-up in October 1980 revealed a left pelvic mass extending from the mid-line to the left pelvic sidewall. A fine-needle aspiration biopsy was obtained via pudendal needle and guide. Cytology examination showed bacteria, neutrophils, and degenerative and necrotic squamous cells without conclusive evidence of tumor. The procedure was repeated by the same physician and cytology of the second specimen was conclusive for squamous cell carcinoma.

Case 2

A 57-year-old white female was found to have unresectable papillary adenocarcinoma of the ovary at laparotomy in October 1980. Chemotherapy was initiated, but in December 1980 inguinal lymph nodes and a right supraclavicular lymph node were palpable. Fine-needle aspiration of the supraclavicular node using a 22-gauge needle on a 10 cc syringe revealed metastatic adenocarcinoma consistent with ovarian primary lesion.

Case 3

A 49-year-old black female was treated in June 1980 with 6,600 rads externally to the whole pelvis for a poorly differentiated squamous cell carcinoma of the cervix, Stage III-B. In November 1980 she noted a painful left chest wall mass. A "Tru-Cut" large bore needle biopsy of this lesion was obtained which proved inadequate for diagnosis. A fine-needle aspiration biopsy again using a 22-gauge needle then yielded conclusive cytologic evidence for squamous cell carcinoma.

Case 4

A 60-year-old black female was diagnosed in September 1976 as having poorly differentiated squamous cell carcinoma of the cervix, Stage III-B. She was given 5,000 rads externally to the whole pelvis, 48-hour intracavitary cesium, and a 400 rad sidewall boost. She was readmitted in October 1980 with left leg edema when a left supraclavicular lymph node was felt. Fine-needle aspiration biopsy using a 22-gauge needle was obtained of the supraclavicular lymph node which demonstrated squamous cell carcinoma.

DISCUSSION

As these case histories demonstrate, fine-needle aspiration biopsy can be a useful tool in gynecologic oncology. A disposable plastic syringe with a 22-gauge needle is a simple and inexpensive piece of equipment when compared to the more elaborate large bore tissue biopsy needles, and it is certainly less complex than the instruments required for open surgical biopsy. Although fine-needle aspiration biopsy cannot replace surgical exploration for staging, when the pathologic diagnosis is the primary consideration, the simpler procedure is preferable.

Sevin, et al. recently reported 140 consecutive fine-needle aspiration biopsies in 124 patients.² They found the reliability of fine-needle aspiration in differentiating between malignant and benign conditions to be 96%. The diagnostic accuracy for predicting malignant disease was 95%; all patients had subsequent

histologic confirmation. When the fine-needle specimen contained malignant cells, specificity of the histologic diagnosis was suggested in 98% of the skinny needle preparations.

In presenting their experience with 2,591 fine-needle aspiration biopsies done between 1967 and 1978, Tao, et al. found fine-needle aspiration biopsy to be a safe and inexpensive method for obtaining specimens for pathologic diagnosis from virtually any accessible localized lesion in the body.³ Their early detection rate for malignant disease was 83% but increased to 93.4% at the time of their report. This improvement in accuracy was partially attributable to increased experience by the cytopathologist interpreting the preparations.

Nordqvist and colleagues reported 77 fine-needle aspiration biopsies in 74 patients with gynecologic malignancies.⁴ Fifty-eight cases had a histologic diagnosis by surgical biopsy; there was excellent cytologic correlation in 55 patients, and no patients suffered complications attributable to the procedure.

At North Carolina Memorial Hospital, fine-needle aspiration biopsy is frequently used on the gynecologic oncology service by residents, fellows and attending physicians in the outpatient clinic and on the inpatient wards. There has been only one known complication in 50 cases biopsies by physicians at all levels of training — one patient developed pelvic inflammatory disease following fine-needle aspiration of a suspicious vaginal lesion but responded well to antibiotic therapy.

Fine-needle aspiration biopsy may avoid many of the complications associated with histologic biopsy by the larger bore needles. A Menghini needle has a five times greater cross-sectional diameter and a Vim-Silverman needle has a 12 times greater cross-sectional diameter than a 22-gauge needle.³ One group reported complications in 25 of 74 biopsies using the Vim-Silverman needle, including bleeding, infection and fistula formation.⁷ In the same study, 77 fine-needle aspiration biopsies were performed without any compli-

cations with the exception of transient fever in one patient.

Fine-needle aspiration biopsy can be used with outpatients as well as inpatients with a diagnostic accuracy as high as 95%. The technique of fine-needle aspiration biopsy requires no prerequisite surgical skills and can certainly be done by a family practitioner or internist as easily as by a gynecologist or general surgeon. Except for the contraindications (coagulopathy, pelvic inflammatory

diseases, adjacent organomegaly, undiagnosed solitary ovarian mass), any definitive mass within reach can be aspirated for cytological evaluation. Thus, fine-needle aspiration biopsy is a useful technique which can be easily done by all physicians. With close cooperation of the cytologist, this method can replace most other biopsy techniques.

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Thus, a celebrated general, during a dysentery, finding the number of his physicians too small, issued by their advice, a general order, that a certain quantity of Glauber salts should be administered to each soldier, at regular intervals; the army was accordingly soon freed from disease. Here the frequent deaths, and the sudden relief afforded by the medicine to thousands, removed all doubt with regard to its efficacy. During one of the campaigns of Austria in Hungary, the retinue of a certain count was entirely free from an intermittent which was general in the army, because bark was regularly administered to his followers: Here the number of the trials, and the continuance of the disease among thousands, who did not take the medicine, proved its efficacy. In the same campaign, the scurvy prevailed; mercury was exhibited, and death was the uniform consequence; as the disease raged extensively, it settled the noxious influence of the remedy beyond controversy. — *Elements of the Theory and Practice of Physic*, by George Gregory, M.D., with notes and additions, adapted to the Practice of the United States, by Nathaniel Potter, M.D., and S. Colhoun, M.D., Vol. I, Philadelphia, Towar & Hogan, 1829.

The Hooper Memorial Lecture: Vistas In the Management Of Bleeding Esophageal Varices

George Johnson, Jr., M.D.

INTRODUCTION OF DR. JOHNSON

It seems most appropriate that this lecture be presented not only by a native North Carolinian but also by a native of Wilmington, Dr. Hooper's home. Further, our speaker's father was a partner of Dr. Hooper.

Dr. George Johnson, Jr., was born in Wilmington and grew up in a medical milieu. After graduating from high school, he joined the Army as a private in 1944, attaining the rank of first lieutenant at discharge in 1946. He returned to Chapel Hill, receiving his B.S. in medicine in 1949 and certificate in medicine in 1950. He received his doctorate of medicine from Cornell University Medical College in 1952 and remained at the New York Hospital for graduate education in surgery until 1958. He was named instructor in surgery at Cornell in 1958-59. After two years of private practice in Durham and as a clinical instructor at the University of North Carolina, he joined the fulltime faculty as an assistant professor of surgery in 1961. He was named professor of surgery in 1969.

Dr. Johnson's clinical interests have been related to cirrhosis, vascular disease, shock and trauma. These interests have been nicely complemented by investigations in the laboratory involving hemodynamic changes accompanying cirrhosis, pulmonary embolism, and arteriovenous fistulae. He has been responsible for the development of a clinical laboratory for the study of patients with peripheral vascular disease. He is a dedicated teacher and highly respected by our students and house staff.

Dr. Johnson has a catholicity of interests and accomplishments, particularly in trauma, vascular surgery, traffic safety, rehabilitation and the development of emergency medical services. He has also been president of the University Association for Emergency Medical Services, president of the North Carolina Chapter of the American College of Surgeons and chairman of several state and national committees. He is currently a Governor of the American College of Surgeons. (His devoted service as a former member of the editorial board of the "North Carolina Medical Journal" should also be remarked on as further evidence of Dr. Johnson's broad interests. Ed.)

Dr. Johnson's role as an educator, surgeon and investigator was further recognized in 1974 when he was named the Roscoe B. G. Cowper Distinguished Professor of Surgery.

A recitation of an individual's achievements and responsibilities often fails to give a real picture of a person. Dr. Johnson's role in the development of the vascular surgical service at the North Carolina Memorial Hospital and his complete commitment to patient care and medical education qualify him to be the complete academic surgeon. His wise counsel is sought by students, residents, hospital administrators, as well as the department chairman.

Theodore H. White in "Search of History" stated that people can be separated into "large" and "small" according to whether their ideas are their own or the ideas of others. According to this criterion, Dr. Johnson belongs in the "large" category.



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C. G. THOMAS, JR., M.D.

INTRODUCTION

In 1924 a young physician from Wallace finished the School of Medicine at the University of Pennsylvania and started an internship at James Walker Memorial Hospital in Wilmington. Following this he was physician for the Atlantic Coastline Railroad and then for a year studied obstetrics and gynecology at the Chicago Lying-In Hospital. He returned to Wilmington in 1927 to begin the practice of medicine.

The chief of surgery at the James Walker at this time was the leading surgeon for southeastern North Carolina. He had the biggest practice and was well respected by both physicians and the public of this and surrounding communities. He asked this young physician who had just returned to join him in practice. This was not a preceptorship; it was not for salary; it was to split the income 50/50. This was in spite of the fact that the elder physician had built up a very impressive practice over the previous 10 years.

Thus, in 1927, Dr. Joseph Ward Hooper (Figure 1) and my father became partners in the practice of medicine. There was never an argument between them. There was no written document regarding their practice. The income was split 50/50 to the day of Dr. Hooper's death in 1952.

I hope this presentation will in some way pay homage to that association. Certainly the topic has no relation. My father was almost a teetotaler and Dr. Hooper was not interested in or concerned with the evils of alcohol.

"IF, as Allen Whipple had hoped, an Eck fistula could be fashioned without mortality or morbidity in patients with bleeding esophagogastric varices, this collection of articles would never have been assembled."¹

This statement by Gardner Child in his book in 1974 reflects the predicament in which we find ourselves in the operative treatment of esopha-

geal varices. Today, I would like to highlight the history of the surgical treatment of esophageal varices, dwell on some of the physiology of the portal venous system — both normal and pathological — look at some of the operative modalities in current use, and end with a stepwise approach which reflects the management of esophageal varices as we practice it today.

Cirrhosis of the liver affects 10 million patients in the United States. Forty-five percent of these have esophageal varices. It is the third most common cause of death between the ages of 25 and 65. In North Carolina, it is the fourth most common cause of death between the ages of 35 and 65. It accounts for more deaths than motor vehicle accidents or suicides.

At the North Carolina Memorial Hospital, it has accounted for one in every 143 admissions over the past 10 years. Thus, there has been one admission for cirrhosis every third day. There have been 1,400 autops-



Fig. 1. Dr. Joseph Ward Hooper

sies performed in a six-year period — 12% of which have revealed cirrhosis of the liver. Thus, our discussion today is relevant — and relevant to the people of North Carolina.

The history of the operative treatment of esophageal varices begins with Nicholay Eck (Figure 2) who in 1877 as a surgeon in the Russian Army, created a fistula between the portal vein and the inferior vena cava. He suggested its use for ascites but before he could implement his thoughts, he was transferred to Siberia and never heard of again.

Guido Banti (Figure 3) was an Italian pathologist who in 1883 described a syndrome of splenomegaly, anemia and progressive cirrhosis of the liver. He attributed the seat of the pathology to the spleen. Around the turn of the century, he convinced the great American internist, Sir William Osler, that the treatment of choice for splenic anemia was splenectomy. Unfortunately, splenic anemia included bleeding esophageal varices as well as hypersplenism and, perhaps, some other diseases. It took about 40 years for Pemberton of the Mayo Clinic to demonstrate that Osler and

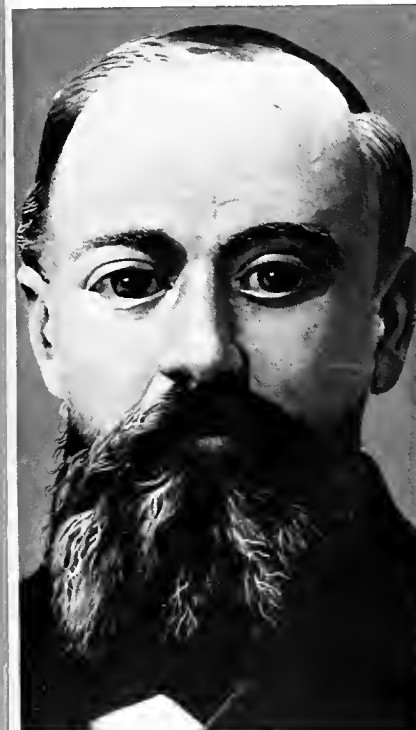


Fig. 2. Nicolay Eck (1847-1908)



Fig. 3. Guido Banti (1852-1925)

his friend, William Mayo, were in error in treating all patients with splenic anemia with splenectomy.

In 1945, at the Spleen Clinic in Columbia, Allen O. Whipple² and his associates, Blakemore, Lord and Voorhees, popularized the portacaval shunt. It took another 20 years to demonstrate that this procedure had little or no influence on the longevity of the patient with bleeding esophageal varices. Thus, it has taken over 100 years to demonstrate the relation of cirrhosis of the liver, portal hypertension and esophageal varices, and to demonstrate some of the biochemical and physiological alterations imposed by the portacaval shunt.

To understand the pathology and management of patients with portal hypertension and bleeding esopha-

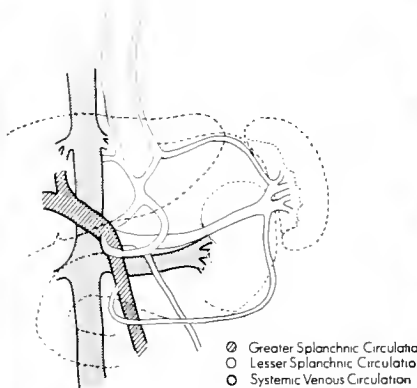


Fig. 4. The anatomy of the portal venous system.

geal varices, some of the anatomy of the portal venous system must be understood (Figure 4). The systemic circulation of the upper abdomen includes the inferior vena cava and the renal veins. The portal venous system is made up of the greater and lesser splanchnic system. The former includes the portal vein and the tributaries to it from the intestinal system and carries nutrients from the intestinal tract to the liver. The lesser splanchnic system drains the spleen, the stomach and the esophagus and connects to the azygous vein in the chest via the esophageal veins. It is within the lesser splanchnic system that esophageal varices occur.

The popular theory for the cause of portal hypertension is an obstruction to the portal venous flow through the liver. The portacaval shunt, or Eck fistula, would decompress the esophageal varices through the coronary vein. Were it not for the interference with hepatic metabolism and from the encephalopathy caused by the immediate entry of nitrogenous materials into the systemic circulation, this procedure would still enjoy the widespread popularity it had a few years ago.

Nathan Womack (Figure 5) of Chapel Hill was one of the first to challenge this ingrained belief that the sole cause of portal hypertension was obstruction. He hypothesized that in many instances, the



Fig. 5. Nathan Womack (1901-1975)

cause of portal hypertension was a massive inflow into the portal venous system — perhaps from the spleen, the stomach or other arteriovenous communications. An operation³ was devised to correct this. The procedure that he developed was designed to ablate the varices and the collateral veins and to decrease the portal venous inflow.

The ablative operations have been popularized by three schools: the Womack in Chapel Hill, the Hassab⁴ in Egypt and the Sugiura⁵ in Japan. The distinguishing features of the Womack procedure include resection of the greater curvature of the stomach in association with splenectomy and gastric devascularization. The results in 60 consecutive patients revealed a long-term survival equivalent to that following the portacaval shunt. However, the 35% operative mortality and the high incidence of recurrent bleeding steered us away from continuing this procedure except in highly selective instances. Those individuals with hypersplenism or without satisfactory veins for shunts, may be candidates for this procedure.

Hassab of Egypt presented the decompressive operation which consists of splenectomy plus obliteration of the perigastric and periesophageal vessels. He has reported excellent results. Unfortunately, his patients had portal hypertension associated primarily with schistosemiasis which in all likelihood is a different disease from the Laennec's and posthepatic cirrhosis that is seen in this country.

The Sugiura procedure's distinguishing feature is transection of the esophagus in association with gastric and esophageal devascularization. It would appear that they are also operating for a type of non-alcoholic cirrhosis that is an entirely different disease than we see in the United States.

The selective shunts are in vogue in most clinics at this time. The distal splenorenal shunt is an innovative procedure developed by Zeppa and Warren and recently reported on by Rikkers.⁶ It is an attempt to selectively decompress the varices through the spleen into the renal vein. It is essential in this instance to

separate the lesser from the greater splanchnic circulation in order for this operation to be effective. Current data are beginning to raise several provocative questions. It would appear that over the course of time, these communicating channels reconnect. This does not necessarily mean the patient will rebleed. It may be that the ravages of hepatitis have subsided, the patient has stopped drinking alcohol, and/or other less dangerous collaterals have developed decompressing the portal venous system.

Another interesting and innovative procedure was developed by Inokuchi of Japan in which a saphenous vein graft was used to shunt the coronary venous circulation into the inferior vena cava while doing a lesser from greater splanchnic disconnect.

The total shunts are associated with a low mortality, a low incidence of rebleeding, yet a real danger from encephalopathy and perhaps a progression of cirrhosis because of portal venous blood diversion from the liver. The ablative operation is associated with a high mortality and a high incidence of rebleeding yet essentially no encephalopathy and preservation of liver flow. The selective shunts can be done with a relatively low mortality, a low incidence of rebleed, no encephalopathy and no decrease in liver flow. The long-term results are just beginning to be available.

Thus, we have three general types of operative procedures to treat bleeding esophageal varices; total shunts, ablative procedures and selective shunts. The total shunts include the end-to-side portacaval shunt which completely diverts portal venous blood away from the liver, the side-to-side portacaval shunt which also diverts portal flow away from the liver and, in fact, decompresses the intrahepatic portal venous system, and the more current mesocaval shunt which was hoped would partially decompress the portal venous system yet allow hepatopetal flow into the liver. Unfortunately, this does not usually occur.

While the main thrust of this presentation has been to present the physiology of the portal venous sys-

tem associated with portal hypertension and the clinical management of bleeding esophageal varices, angiographic evaluation of the portal arterial and venous system has been essential in the search for management of this disease. These include a celiac and superior mesenteric artery angiogram looking for anomalies of the arterial system and demonstration of a patent splenic and portal vein and hepatopetal flow on the portal venous angiogram. Hepatic vein angiograms are performed to see the architectural structure of the liver and to measure the hepatic wedge pressure which reflects the portal venous pressure.

With this knowledge of the pathological physiology of the portal venous system and a knowledge of the anatomy as defined by x-ray, a decision regarding a choice of one of the operations is made. For the person who is an incurable alcoholic, perhaps the most important thing is to stop the bleeding. In this instance, we may well choose a portacaval shunt. If the condition of the liver is such that there is already hepatofugal flow (away from the liver), a total shunt is suggested since further diversion of the blood from the liver does no harm. Neither the ablative nor the distal splenorenal shunt should be performed as an emergency since they are technically more difficult procedures. In those patients in whom there are no available veins, an ablative operation should be strongly considered. The ability to stand the nitrogen load can be tested by giving a challenging dose of urea and monitoring the serum ammonia. For those patients who have uncontrollable ascites, a distal splenorenal shunt or ablative operative procedure may be harmful. Hypersplenism is not always cured by the portacaval shunt or the distal splenorenal shunt. Thus, this might be an indication to consider the ablative operation. Actually, the best results with the ablative operation are in those people who have large spleens and hypersplenism as measured by a platelet count less than 100,000. Finally, and perhaps most important, are the expertise of the surgeon and the facilities of the institution. Thus,

for the surgeon who does infrequent operations as treatment for bleeding esophageal varices, the distal splenorenal shunt and the ablative operations can be extremely difficult.

The clinical management of the patient with upper gastrointestinal bleeding is depicted on the algorithm (Figure 6). Immediate endoscopy is performed. For the patient who has nonvariceal bleeding, the therapy is as usually indicated. If varices are found but are not bleeding, we observe and evaluate them. An elective operation is performed only if there has been massive hemorrhage or it is a second or third hemorrhage. If, on endoscopy, the varices are bleeding, we give intravenous pitressin, correct the coagulation abnormalities and give blood transfusion based on the hemodynamics and not on the hematocrit. There is a correlation between increase in systemic pressure and increase in portal venous pressure. Therefore, we should be certain that the central venous pressure is not

elevated if at all possible. In addition, one of the more important considerations in increasing viscosity of blood are the red cells. An excess of red cells in these patients has a significant influence on the viscosity and, thus again, on the portal venous pressure.

If the bleeding is controlled, we observe and evaluate and perform an elective operation if there has been massive hemorrhage or if it is the second or third minor hemorrhage.

If the bleeding continues, however, we attempt Sengstaken-Blake more tube tamponade. If the bleeding is controlled, we observe and evaluate in the hospital and perform an elective operation if indicated. If the patient continues to bleed with a Sengstaken tube, an emergent operation is performed.

There are those who embolize the coronary vein and short gastric veins by transhepatic catheterization. It is not a definitive procedure but it may help avoid the emergent operation.

Sclerotherapy of the varices

through the esophagoscope has been recorded with increasing frequency. Excellent early results have been reported⁷ although repeated injections are required.

Orloff⁸ recommends immediate emergent operation as soon as the patient is seen and the diagnosis of bleeding esophageal varices is confirmed. We do not subscribe to this. He reports a 50% mortality rate with this operation. We think we can do better than this.

Today I have tried to present to you that cirrhosis of the liver and esophageal varices is a prevalent, disabling and costly disease. The treatment of esophageal varices is a challenge to both medical and surgical colleagues. The operations consist of total shunts, ablative operations and selective shunts. They have been presented relative to the hemodynamics of the lesser and greater splanchnic systems. The results of the selective and ablative operations depend upon our ability to separate these two venous systems. Whether continuation of this separation is essential to prevent recurrent bleeding remains to be seen. The choice of operations should be individualized according to the patient and will depend on the expertise of the surgeon and the facilities of the institution.

It has been a pleasure for me to honor the association of my father and Dr. Joseph Ward Hooper with this review of the current therapy for portal hypertension.

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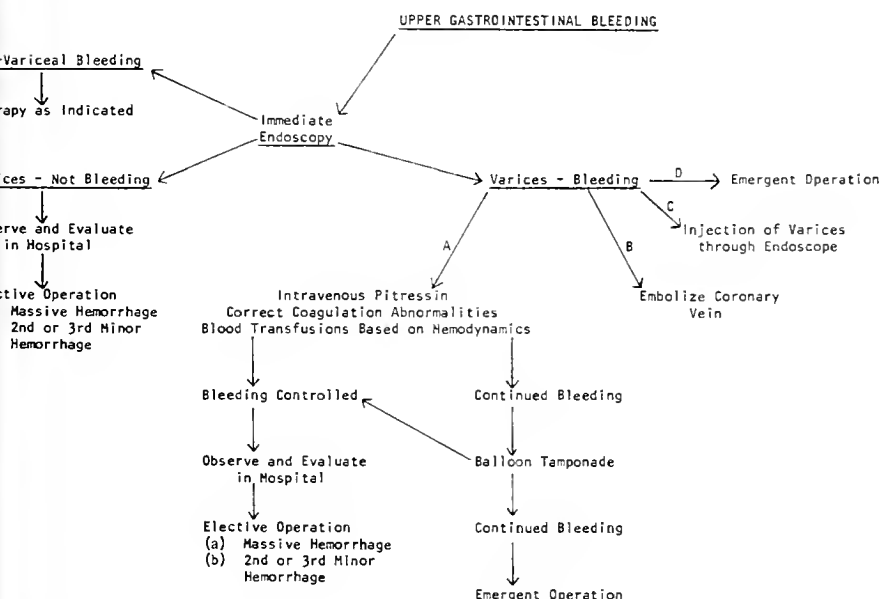


Fig. 6. Management of the patient with bleeding esophageal varices who presents with upper gastrointestinal bleeding.*

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Prophylaxis of Neonatal Eye Infections

Robert G. Dillard, M.D.

RECENT developments on the subject of prophylaxis for neonatal gonococcal eye infections have made this once simple issue a complicated one. Topics as diverse as mother-infant bonding and Chlamydial and group B streptococcal infections provide a challenge to the physician attempting to come up with a regimen which both pleases an increasingly vocal group of parents and provides the optimum in safety and efficacy for the newborn.

The importance of eye-to-eye contact in establishing optimal mother-infant relationships has been stressed by Klaus and Kennell.¹ They believe that the visual system provides "one of the most powerful networks for the mediation of maternal attachment." Silver nitrate (1%) given immediately after birth has been shown to inhibit eye opening in the first 20 minutes of life.² Mothers of late treated infants in the above study were "surprised and delighted with their wide-eyed babies." In spite of the latter observation, the mothers of early and late treated infants exhibited no differences in behavior with respect to "baby focused attention or excitement during this initial social encounter."² It is not known whether impairing this early visual experience has a negative effect on the way that parents interact with their children on a long term basis. A recent critical review of the subject of maternal attachment questions the evidence

that such early postnatal experiences profoundly affect the development of the mother-infant bond.³

However, because of the above issue, many (including parents) have promoted the instillation of silver nitrate drops after the initial parental encounter when the infant has been admitted to the nursery. Although there are no definitive data on the safety of delaying treatment, several committees of the American Academy of Pediatrics state that doing so "for up to one hour after birth probably will not affect efficacy."⁴

Another issue regarding silver nitrate relates to its failure to prevent neonatal Chlamydial eye infections ("inclusion blennorrhea"). *Chlamydia*, like many sexually transmitted organisms, is becoming a common organism causing neonatal infections. Erythromycin, but not tetracycline, may be effective as a prophylactic agent for neonatal Chlamydial eye infections.^{5,6} Neither agent has been shown to prevent respiratory illness caused by that organism.

That neither erythromycin nor tetracycline induces a chemical conjunctivitis (eye opening has not been studied) and that at least one agent may have the additional advantage of being effective against *Chlamydia* have led some to recommend these agents over silver nitrate as drugs of choice in neonatal prophylaxis for gonococcal eye infections. In fact, the Center for Disease Control (CDC) has recently revised its recommendations in this regard by stating that "ophthalmic ointment

or drops containing tetracycline or erythromycin or a 1% silver nitrate solution" are effective and acceptable.⁷

Both erythromycin and tetracycline appear to be effective agents for the prevention of neonatal gonococcal eye infection.^{8,9} However, neither has been tested in populations of infants born to mothers who are at high risk for having gonorrhea. The decision by the CDC to alter its recommendation, therefore, may be premature, especially in view of the increasing incidence of gonococcal infections in this country.

Siegel, et al, suggest that intramuscular (IM) penicillin is an effective prophylactic agent for neonatal gonococcal and group B beta streptococcal infections;¹⁰ however, an increased incidence of penicillin-resistant pathogens in the study led them to oppose routine administration of IM penicillin for the present.

After careful consideration of these data, the Committee on the Fetus and Newborn of the N.C. Chapter of the American Academy of Pediatrics recommends the following:

1. That silver nitrate (1%) is still the agent of choice for routine prophylaxis of neonatal eye infections.
2. That it may be instilled up to one hour after delivery.
3. That the infant's eyes should not be irrigated after instillation.
4. That in the event of parental objection to the use of silver nitrate, either tetracycline (1%) ophthalmic ointment or drops or erythromycin (0.5%) ophthalmic drops may be used.

Chairman, Fetus and Newborn Committee, North Carolina Chapter, American Academy of Pediatrics, Associate Professor of Pediatrics, Bowman Gray School of Medicine of Wake Forest University, Winston-Salem, N.C. 27103

5. That until more information is available, IM penicillin should not be used as a prophylactic agent for neonatal gonococcal eye infection.

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Though the history of the operation of medical causes is obscure, from their variety and their conflicting nature, yet by a proper examination of them, great triumphs have been achieved over the most dreadful maladies; and it is by observation, accurately appreciating the circumstances, on which the efficiency of remedies is decided, that the benefits of our science are most conspicuous. Thus, for instance, with regard to the treatment by venesection of inflammatory diseases, the most common of all morbid affections: However hidden may be the seat of the inflammation — in the eye, the head, the lungs, if its symptoms be present, this plan of treatment effectually removes it, and prevents, when judiciously administered, the formation of abscesses, which almost always end in the destruction of the organ, and if the organ be necessary to life, in the death of the individual. —*Elements of the Theory and Practice of Physic*, by George Gregory, M.D., with notes and additions, adapted to the Practice of the United States, by Nathaniel Potter, M.D., and S. Colhoun, M.D., Vol. 1, Philadelphia, Towar & Hogan, 1829.

1982 Mid-Winter Conference: Can the Practicing Physician Be A Successful Politician?

The Honorable Otis R. Bowen, M.D.

NOTE: The 1982 Mid-Winter Conference, held in February in Winston-Salem, was a great success with over 150 participants. Previously called the Conference for Medical Leadership, the meeting originated in 1959 as a means of instructing county medical society officers and committee chairmen. However, with organized medicine increasingly called upon to represent the views of the profession on a wide variety of issues, the Conference now focuses on the dissemination of information to the membership of the North Carolina Medical Society. It is sponsored by the Committee on Communications. This year's theme was "Medicine in the '80s." The JOURNAL will provide coverage and review of the Conference for the next few months. This month, the keynote speaker's address is reprinted in full.

A.A.H.

I'M a little apprehensive for I was asked to cover a broad and rather controversial subject. Several titles were mentioned, such as, "Physicians Holding Office," "How to Manage Time for Medical Practice and Politics," and "The Physician as a Leader."

I don't mean to imply by my remarks that I've been the type of leader about whom I've been asked to speak, but I suspect a good place to start is how I became involved in politics that eventually led to being governor for eight years of the 12th most populated state in the nation.

I began as county coroner. It was not that I particularly desired to be coroner, but I come from a small town of 3,500 people, a small county of 37,000, and a small county medical society of about 20. We physicians felt that the position of coroner should be filled by a physician and decided among ourselves that one of us should be available to run for the position when required.

Shortly, thereafter, my county chairman came to me and asked if I'd run for the position. I agreed to take my turn so I ran and was elected. As I served, I found that I became quite interested in state and local government. As I served and associated with state and local public officials, I found myself growling about some of the things happening *and* about some of the things *not* happening. I decided and was reminded by my colleagues, both medical and political, that if I felt that way I should become more involved.

The position of state representative for my district became vacant at the same time my tenure as coroner was completed. I decided to run for state representative.

At that time the Legislature met for only 61 calendar days every two years. I felt that even with a family of four children to feed and educate, even though at that time it was a money losing job, I could still do it



Otis R. Bowen, M.D., is a graduate of Indiana University and received his medical degree in 1942 from Indiana University School of Medicine. After completing his internship in 1943, he joined the United States Army Medical Corps and served during World War II, 1943-1946. Currently a Professor and Director of Undergraduate Family Practice Education at Indiana University School of Medicine, Dr. Bowen has held numerous political positions, including: Indiana House of Representatives, Minority Leader, 1965-1967; and Governor, State of Indiana, two terms, 1973-1981. Dr. Bowen was the first recipient of AMA's Benjamin Rush Award for outstanding contribution by a physician in citizenship and public service. He also received the Indiana Public Health Association "Merit Award" in 1971.

providing I took very short vacations. So, I ran and was elected and re-elected for seven terms. I became minority leader in my fourth term and Speaker of the House in my fifth, sixth and seventh terms.

In 1972 I decided to take the big jump and run for governor. I was elected by a record majority and in 1976 re-elected by an even bigger majority.

I believe part of my success in the elections and in my administration was the family doctor image. I certainly was not handsome, flamboyant, or an orator. But people are not necessarily looking for those traits; they are looking for someone in whom they can have confidence and trust and someone they perceive to be a problem solver.

I did convey the message that I would approach governmental problems in the same methodical manner as I did medical ones. First, make a diagnosis — what's wrong? What's the trouble? Second, outline a course of action or remedy; third, apply the remedy.

Although the campaign theme followed the "county doctor" image, it sounded questionable at first. But it caught on and was helpful. The theme was comprised of three words: "He hears you." I found that people, even during the campaign, wanted to be heard. The fact that I took the time to listen and respond made a difference, and the word spread.

Further, I was able to get people to believe — and it was no hoax — that the combination of legislative experience in leadership roles and medical knowledge was a good background from which to enter the office of governor.

This was so because about 50% of all the problems with which state government deals is public health, directly or indirectly. I suspect it is no different in your state or any other state. Let me enumerate some of these problems to show you the extent to which public health extends into government, to show you that a great deal of the budget of state government involves public health, to show you how much state government touches your lives, to point out how much government is

involved in the health care delivery system. But, perhaps more than anything else, to illustrate to you how well qualified you are to serve in public office in almost any capacity.

I might add that the state's involvement is much less than that of federal government. Local government is also involved but only insofar as the state and federal levels permit or mandate.

For example, state government is deeply involved in:

- Mental Health — one of the state's biggest spenders of tax dollars, and it is almost all health related.

- Welfare — perhaps 40% public health.

- Corrections — about 25% public health.

- The state board of health's functions are numerous and are totally public health.

- The education of doctors, nurses, dentists, pharmacists, veterinarians and various health technicians are health related.

- Other functions include malpractice insurance, licensing of health professionals, hospitals and nursing homes, occupational health & safety, inspections of nursing homes and hospitals, operation of schools for the blind, the deaf and the multiple handicapped; a veterans' home and hospital, a soldiers' and sailors' children's home, air pollution, water pollution; solid waste disposal; water, meat, dairy and egg inspection; mosquito abatement; maternal and child health programs; immunizations; traffic safety programs; rehabilitation programs and services; animal health; emergency medical services; alcohol and drug programs; dealing with the federal government on health problems.

I suspect it will get worse instead of better because of the maldistribution of health care and the increasing cost to the patient.

Like it or not, health care and health care costs have been politicized. Decisions affecting our ability as doctors to continue providing quality health care are going to be made in a political environment far

removed from doctors' offices, nursing homes and hospitals.

Because I think government plays such a big part in the health care delivery system and because I urge each of you to become involved in the political process, let's talk about the federal government and its previous plans for the medical profession. It was obviously the intent of the Johnson and Carter administrations to take it over. And that was the attitude of many congressmen during the past 50 years. Through the diligence of the medical profession and its allies and the common sense of some elected officials this was thwarted. It looks like it may have suffered a bigger setback when President Reagan was elected, but, even so, we need to be ever alert.

President Reagan said the right things in the campaign but the executive branch is just one part of the law making process. We're at the cross roads in medicine. Whatever happens during the Reagan administration in the health care field will determine how medicine is practiced for the next generation.

Good medicine no longer is the only basis on which future decisions related to health care will be made. As a matter of fact, the tendency of those pushing for national health care planning and national health insurance is to picture you and me, and all our fellow health care professionals, as greedy obstructionists trying to reap wealth from sickness. It is just not true, but we must continue to fight for our principles and avoid the image of greed and of being an obstructionist. We must try harder to give better care at an affordable cost. It will require the education of those in political power and of the public. It will require that our patients listen to, and see, our point of view. If this is not done by us, health care planning will be left exclusively to the federal government — a fact I find to be abhorrent and unacceptable.

As for cost containment, I am convinced that it can be done without getting the clumsy fingers of the federal bureaucracy deeper into it. But the feds are constantly looking down our throats and are

very carefully looking over the health care cost increases as compared to other rising costs of living. Suffice it to say there are many in high public positions who are restless and unhappy with voluntary efforts.

There are, however, over 500 categorical grant programs, many dealing with health care; I am certain, if we as physicians have input, that we can advise how overlapping and duplication can be reduced and spending curtailed without lowering quality.

Let me throw in a statement on malpractice insurance — another reason for your political involvement. This is a subject dear to my heart for we in Indiana, as a result of a 1975 law, have the best law on malpractice in the nation.

New York City physicians are paying dearly for it. Neurosurgeons in 1981 paid \$50,000 for their yearly premiums. It is scheduled to go up another 20% this year. The cure is legislative and must deal predominately with the time in which a suit can be filed and the amount for which one can be filed. Our law has a \$500,000 limit and a two year limit from time of occurrence — not from the time of discovery. In addition, we have a medical review panel which renders an opinion on the case; the opinion is admissible as evidence in court. As a result, the premiums in Indiana now run from \$725 per year for class I to \$5,798 per year for class VII. The Supreme Court of Indiana held the act to be constitutional.

Malpractice problems differ from state to state depending on many factors. For that reason it should be addressed from state to state. A federal malpractice effort would require a congressional bulldozer where perhaps a sensitive state hand is all that is required.

Let's get back to politics and your participation. Planning and preparation are necessary and important ingredients for any election year and any campaign, if you expect to win. You cannot depend on the rabbit's foot — it didn't work very well for the rabbit. Neither can you become complacent, lazy, or apathetic. Politics can be enjoyable. If

you want to enjoy it and if you want to be effective, you've got to be a participant and not a spectator.

To win an election you must plant — select — good candidates — candidates who are honest, conscientious and hard working problem solvers — candidates whose hearts are a little softer than their heads. You must fertilize and water them by helping with good organizational and financial support and by helping them gain stature. Further, you need to keep the weeds out by avoiding infighting and jealousies between the candidates and within the organization.

The type of candidates about whom I've been talking might have to be sought out and convinced to run. This is getting harder and harder because of the withering gaze constantly on those in public life. The news media — and I'm not complaining too loudly about this — seems eager to expose and decry even the most trivial foibles, feeding an almost impossible growth of popular disenchantment and expectations. Further, candidates must bare the most intimate details of their social, marital and financial lives.

I doubt that there has ever been a time in history when people have been so aware of politics and politicians as today. They realize the power that can be exerted if enough people collaborate and express their opinions at meetings and at the polls. The politician is a newsmaker; he or she is the center of attention be it for good or ill; and he or she is the one on whom people do often depend.

It is a peculiar circumstance that, when a poll is taken as to which profession is trusted the most, the politician is nearly always last; the physician, nearly always first. Yet, when a poll is taken to name the most influential people, it is not the scientists, nor the educators, nor the musicians, nor the industrialists, nor the artists, nor the clergymen, but the politicians who are first.

One of the necessary jobs in a campaign is getting out the vote. The likelihood that one qualified voter will vote is subject to a lot of

ifs. Let me present the results of an interesting study to help you in getting out the vote if you are a participant and not a spectator.

John Burkhart wrote an article for the *Indianapolis Business Journal* and cited some interesting facts. He quotes from a research paper commissioned by the Connecticut Mutual Life Insurance Company entitled, "Report on American Values in the 80s: The Impact of Belief." Age, income, education, religious commitment and political philosophy are important factors in whether a qualified voter goes to the polls or not.

"41% of those 21 to 24 vote frequently in local elections compared to 80% of those 65 and over.

"The higher the income, the more likely one is to vote.

"High school graduates vote more frequently than those who do not graduate and those who go to college outdistance them both.

"The greater the religious commitment, the more frequent the voting. In fact, those with the highest commitment are nearly twice as likely to go to the polls as are those with the lowest.

"Further, conservatives vote more frequently than moderates and moderates more frequently than liberals, although the difference is small."

No one knows the value of a single vote more than I do. In 1958 in my race for state Representative I lost by four votes — one-tenth of one vote per precinct. Of course, 1958 was a bad Republican year, for even Vance Hartke won in Indiana for U.S. Senate.

There's a true story about a backwoods Indiana farmer who exercised his right to vote and by so doing set in motion a chain of events that changed the course of history. In 1844, Freeman Clark, an old farmer of Switzerland County, was seriously ill and bedfast, but he persuaded his sons to carry him over the rough country roads to the county seat so he could cast his vote.

He was determined to vote for David Kelso, his attorney, running for the state Senate. Mr. Kelso supported Clark's choice for president,

Andrew Jackson. The exertion of going to vote caused Clark's death, but Kelso was elected by one vote — Freeman Clark's.

At that time the U.S. Senators were elected by the State Legislators. In Indianapolis, the Democrats in the state Senate counted on Kelso's vote to muster a majority of one. But when a caucus was held, a majority of the party's delegation favored a man who would vote against annexation of Texas if sent to the U.S. Senate.

Senator Kelso made clear he would not vote for his party's choice, and a deadlock ensued between the Democrats and the Whigs that lasted for days. The Switzerland County Legislator remained adamant despite the enormous political pressure on him.

Finally, he made his move. Senator Kelso proposed a new candidate, Edward A. Hannigan. At the Democratic caucus he notified his colleagues that, unless they supported Hannigan, he would bolt his party and vote with the other side, sending a Whig to Washington.

The caucus ended with the Democrats resigned to the fact that they had no other choice. The Senate then elected Hannigan by a single vote — Kelso's.

The first major issue to come before the U.S. Senate after Hannigan took his seat was a proposal from President John Tyler to reconsider the Texas treaty of annexation. While sentiment in favor of Texas had been growing, approval of the treaty was in serious doubt. It was ratified, however, with the necessary two-thirds majority by only one vote — that of the new Indiana Senator.

A single vote insignificant? On just such small decisions do the destinies of nations sometimes hang.

In this sequence of events, it might well be said that the vote of a dying man from the hills of a backwoods county in southeastern Indiana — a farmer so strongly motivated to cast his ballot that he would not be denied — made Texas a state.

Not only must votes be counted, but every vote counts. The issues and the privilege and obligation of

every citizen to vote for or against them are every bit as important today.

So, as you work to get out the vote, remember these issues and the value of one vote.

A campaign cannot succeed without money. It is more expensive every year, and few candidates can afford to run on their own money. If you believe in a candidate and if you agree with his or her philosophy of government, then encourage the investment of a few dollars. Those who invest have something at stake and will work harder to win.

It is clear that you can't be involved if you don't care, and, if you don't care, your involvement is unnecessary and probably harmful. Care and contribute some of your time, talents, efforts and finances. It's good therapy for you. You can make the difference between a weak and a strong candidate's election. But, why not be a candidate or public official yourself?

Free expression of responsible ideas is our duty, especially in areas in which our experience and knowledge qualify us as experts. I know you believe in the democratic process calling for the free exchange of ideas. I know too that, in spite of critical comments to the contrary, you recognize the value of working with government for long range solutions.

The general public's image of you as a physician is that you are a leader, you are intelligent, you are educated, you are respected, you have wisdom not possessed by most others, you are influential. So who can possibly be more effective in helping shape our community's, state's, and nation's future for the better?

How can you do this? It's simple. There are three ways. I'll simply name them in order of effectiveness and importance.

First, you can be a public official — preferably an elected one, but an appointed one would be better than none. The position could be anything from library board member to legislator, governor, or president.

Secondly, if you can't be a candidate or accept an appointive position, you can work in politics in the

party of your choice as a party official or in the medical society through your PAC organization.

Thirdly, if you can't do either of these, you can help finance the party of your choice or the candidate of your choice by contributing to their campaign.

My comments will remain sterile rhetoric unless translated into specific efforts and actions to contain federal growth. I think the present Administration is trying to do this. I urge your help in areas that affect your livelihood — medicine, taxes, overregulation. That help can take many forms.

And now a word in your behalf. Besides being individuals who care, besides carrying the burden of the health and well-being of one's community, physicians also have a responsibility to themselves and to their families. Sometimes the intense desire and drive to take care of patients personally overtakes the concern for one's self and for one's family. It is understood by most people and by most spouses and children of physicians that medical practice will cause some imbalances in all of their lives. This can create disappointment, alienation and breakdown of a good relationship. Sometimes there are regrets later in life that more time was not taken to smell the roses and watch the sunsets together, as time sped by. A good marital and familial relationship contributes indirectly to better patient care. Do it for your sake, for your spouse's sake, and for your patient's sake.

The practice of medicine is basic to the continuation of mankind. The human achievements which can be made during the span of one's career are beyond the comprehension of most of us. But the skilled practice of medical science must ever be tempered with the humane and conscientious application of a deep and abiding love and concern for mankind. Without such a temperament, the practice of medicine moves from an honored profession to that of a skilled and highly paid technician.

Let me close with a quote by Helen Steiner Rice which I believe

best describes what most doctors
are really like.

“The more you give, the more
you get.

The more you laugh, the less
you fret.

The more you do unselfishly,
The more you live abundantly.

The more of everything you
share,

The more you always have to
spare.

The more you love, the more
you’ll find,

That life is good, and friends are
kind.

For only what we give away,
Enriches us from day to day.”

When we contemplate the air, and the life of the animal, the emetic and the stomach, continued cold and certain fevers, we can discover no intermediate agent from which the effects produced, could, prior to experience, be inferred. The contact of the air with the lungs, of the emetic with the stomach, the appearance of frost, and their results, are all we know with regard to these phenomena. The first, the air, the emetic, and the frost, are called causes, as they produce certain phenomena, which are called effects; and as they follow them invariably, we expect the appearance of the one as the result of the operation of the other; a wise provision of nature, upon which all our operations in the regulation of our happiness is founded. Thus when a patient faints, or when life is suspended, the air is admitted more freely to facilitate recovery. When poison is taken into the stomach, an emetic is administered, or it is withdrawn by a syringe and a tube, because the qualities of the air in the resuscitation, and the emetic or the syringe and tube in discharging the contents of the stomach, are powerful; they have been and always will be the same; we therefore operate with confidence, and success attends our efforts; and this certainly depends upon the observation of the power of these respective agents to produce these certain and specific effects, and is the result of repeated experience. The essential and intimate nature of this power, however, cannot be understood. All we know of it is the observance of its general properties, and the circumstances which modify them; thus, invariable antecedence is an essential attribute of a cause, as invariable consequence is of an effect, unless some adequate agent intervene to prevent it. On the application of the finger to the blaze of a candle, pain is produced; the effect is uniform, and we avoid it ever after; and because the pain invariably follows the application of the blaze, which must as invariably precede, they possess one requisite of the relation of cause and effect. But in order to complete the relation of cause and effect, something more is necessary than mere antecedence: thus day precedes night, and night precedes day, and yet they are not the cause of each other, but both flow from the effect of the same agent, the sun; day appearing as he rises, and night succeeding as he disappears.

This something is the simple and constant observation of the effect, as the result of the cause; and it is the province of philosophy accurately to determine all those circumstances, which contribute to produce the effect, to separate those which oppose it, and to ascertain their power; so that the resources of nature may be constantly within our reach, by an accurate knowledge of their causes. Thus it is, that by commanding the causes of things, we control also their effects. The conviction of the power of a cause must be clear and decided; and it is proportioned always to the frequency of the instances in which it has been observed to produce the effect, provided there exist no collateral circumstances, to which it can also be attributed; thus, the effect of the sun in producing day has been so constantly and frequently witnessed, that it is impossible not to attribute it to that cause. When, however, a cause is observed less frequently, there will be some doubt with regard to it; and this will be in proportion to the rareness of the observations made. Thus the fevers of summer have been attributed to bad food, bad water, and to mineral effluvia; and as the system is often exposed to these agents, it is difficult to determine from observation, what is the exact power of each, or whether they have any agency, since they frequently operate on it at the same time and in union with other causes, from which they had not been completely separated. Repeated observation, however, has cleared up the difficulty. Bad food, bad water, and mineral effluvia are found not to be the causes of bilious fevers, but exhalations from putrefactive materials of a vegetable or an animal nature. — *Elements of the Theory and Practice of Physic*, by George Gregory, M.D., with notes and additions, adapted to the Practice of the United States, by Nathaniel Potter, M.D., and S. Colhoun, M.D. Vol. I, Philadelphia, Towar & Hogan, 1829.

Toxic Encounters of the Dangerous Kind

POKEWEED

Realizing it is poor form to criticize a traditional Southern culinary specialty, it is important to discuss "pokeweed" and "poke-salit" because of the toxic potential of this regional "delicacy." It may be said of this plant-as-food that one man's (or woman's) salad is another man's (or woman's) poison.

Pokeweed (*Phytolacca americana*), AKA poke, pigeonberry, or inkberry is a large weed found in moist woods, roadside ditches and damp fields primarily in the eastern half of the United States. The plant arises from a rather large root from which stout reddish-purple branched stems appear, usually reaching a height of five to six feet. The berries are purplish-black and are attached to the stalk by short stems.

Apparently, the joy in eating this "weed" is usually limited to the consumption of the young, tender leaves which are single, from four to twelve inches long, with smooth edges. It is alleged that proper preparation of the leaves or sprouts or stems involves boiling them in water and discarding the cooking water and then reboiling. Canned pokeweed leaves are sold commercially for those who get the "munchies" for this product out of season.

The problem with this "natural food" is that it contains some poisonous ingredients such as phytolaccine, triterpene saponins and a mitogen. The root is the most toxic part and to a lesser degree, the leaves, stems and berries are potentially poisonous also. The main toxic agent is phytolaccine which is a potent gastrointestinal irritant. As the plant matures the level of this toxin increases throughout the plant (for some reason the green ber-

ries are more toxic than the mature berries). Some "experts" claim the berries are edible if they are cooked. In a typical toxic encounter with pokeweed, after a delay of 2-4 hours, there can be rather profound abdominal cramps, remarkable diaphoresis, and unrelenting emesis with diarrhea somewhat later. More severe intoxications can produce dyspnea, lethargy, convulsions, dizziness and even death. Most patients recover within 24-48 hours. For adults the more common mode of intoxication occurs following the ingestion of uncooked or improperly cooked leaves in salads; the roots, also poisonous, are often mistaken for horseradish or parsnips. Preschool children are more apt to be poisoned by ingesting the colorful berries. It is often stated that 10 berries, if eaten uncooked by a preschool child, can be very toxic. There is no specific treatment or antidote; symptomatic, supportive care is the main therapeutic tool.

Those pokeweed experts who snicker at the foibles of the inexperienced must read the CDC's MMWR report of February 20, 1981,¹ about a group of campers who allegedly prepared the leaves in the standard fashion to make poke salad and became quite ill with the typical GI complaints. As for me — lettuce, onion, tomato, and Italian dressing please.

Ronald B. Mack, M.D.
Associate Professor of Pediatrics
Bowman Gray School of Medicine and
Chairman, Committee on Accidents
and Poison Prevention
N.C. Chapter of the American
Academy of Pediatrics

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Editorials

REPORT FROM WINSTON-SALEM: THE EXECUTIVE COUNCIL IN MID-WINTER

Go now, and work; for no straw shall be given you, yet you shall deliver the same of brick.

Exodus 5:18

Understanding the ebb and flow of the forces — economic, psychologic, governmental — that affect our daily lives often seems beyond our reach. At times some catalytic event occurs or some charismatic leader appears which permit the generation of dynamic and constructive group feeling. The confidence which results seems to engulf obstacles and we think ourselves on the way to a truly better world. Political leaders are likely to see themselves as such human focal points, a persuasion not always shared by their fellow citizens. The public at other times tends to be more concerned with mundane matters: food, shelter, taxes, jobs, friends, vacation and so on.

To most of us today is hardly heroic but rather demands defensive posturing, cautious management and a certain degree of stoicism. For a few, perhaps younger, tomorrow holds promise not to be deferred by committees, the plight of El Salvador or the threat of a nuclear holocaust. When too many rush to either extreme, idolizing the leader or trailing off into apathy, faith and inertia may triumph over reason and many an action, sudden and on the wing, must be repented of without sufficient leisure.

If there has been a catalytic word in our times which has not engendered group feeling, it is cost, anticipated and unanticipated. It was certainly a pervading concern at the 1982 Mid-Winter Meeting of the Executive Council of our society in Winston-Salem, February 5 and 6. Under the graceful but precisely struck gavel of President Josephine E. Newell, the council first looked to its own future. In times of stress, our organization must aspire to accurate projection as guided by its Committee on Finance, Dr. Ernest B. Spangler, Chairman. In propounding their prognostications, the committee must think of predicted population and industrial growth, the undulations of the Consumer Price Index (CPI), the temper of the Federal Trade Commission and the other vagaries of government in its calculations. After such deliberations, the committee concluded that our society's expenses can be expected to increase at the rate of 10% per annum, at least until the protestations of supply-siders and monetarists are synthesized into something like effective control of inflation. Meantime membership presumably will rise by only 5% per year. Since our other sources of revenue are limited and cannot be expected to grow at even a 5% rate, annual dues must continue to rise ever so gradually because medical

societies, unlike states and nations, cannot establish record deficits and survive.

Unanticipated costs are another matter, less manageable and apparently less predictable as the outlay and the debt get bigger. If we are interested in consequences of looking into a clouded crystal ball, we need only examine health care outlays in this country in 1980. Our Federal Government spent \$70.9 billion in 1980 for health care, up 17% from 1979. This item lagged only behind National Defense and Social Security in the annual budget. Total spending for 1980 for medical care in our nation reached \$247 billion, 9.4% of the gross national product. Certainly when Medicaid, Medicare, the Kidney Program and others were begun, their costs were grossly underestimated so that they have been inadequately funded. The same certainly must be said of the more venerable Social Security system.

Not surprisingly then the council devoted considerable time to the matter of statewide Medicaid reimbursement. Here President Reagan's proposal for the nationalization of Medicaid, anti-trust implications about fixing fees to control costs and even the opaque and convoluted paragraphs of the Federal Register must be examined and reexamined. Most in attendance would agree, taking the Federal Register as an example, and paraphrasing the 18th Century English poet, dramatist and physician, Oliver Goldsmith, that when words accumulate, thoughts decay and action withers.

The problem with Medicaid is in its Pharaonic stance. Rather than bricks without straw, Medicaid underpays and demands full value at a cut rate, thus passing costs to private third-party payers and to patients. Thus efforts to cut hospital costs decrease hospital income and increase non-profit hospital deficits. Under Medicaid there is no financial incentive for improving the situation, only stimulus for more oratory and more committees. Non-profit hospitals are particularly victimized but they are called on as they have always been to offer more charity. In 1980, for example, the 327 non-federal members of the American Hospital Association's Council of Teaching Hospitals comprised 5.6% of our nation's hospitals but had 47% (\$601 million) of charity care deductions and 35% (\$1.2 billion) of bad debt deductions. (Interested readers who wish to pursue the matter are directed to Bulkeley's impressive if disheartening analysis of the predicament of the Roger Williams General Hospital, a non-profit affiliate of the Brown University Medical School in Providence, R.I., which appeared in the February 9, 1982, *Wall Street Journal*).

Little wonder then that the North Carolina Com-

mittee on Medical Cost Containment respectfully reported that it was not effective and should be discontinued. It was further suggested that a new ad hoc committee be set up to encourage investigation, publicize the problem and seek remedies such as they might be. Obviously, the new committee would have to assess our health planning, the Reagan proposal and many other facets of a very complicated process.

Any number of duly constituted and ad hoc committees might devote some thought to the effects on our system of the invasion of health care delivery by private and publicly owned corporations. Many a hospital, once the pride and unifying force of the small town, has been bought and reorganized for profit. Whether such hospital chains in the making will see fit to assume a proportionate share of responsibility for those dependent on Medicaid and other charities remains to be seen. But the experience of our teaching hospitals is not encouraging and the situation can only be expected to worsen.

Perhaps some incentives need to be built in to encourage the public as well as the private sector involved in health care delivery. Home health services suffer because hospitals can pay nurses more and public administrators often do not see fit to offer home health workers — nurses, aides, orderlies, physical therapists and so on — adequate income and fringe benefits although it has been amply demonstrated that keeping home bound patients at home is considerably cheaper financially and emotionally than hospitalizing them or exiling them to nursing homes. We need to find some mechanism to protect such public programs which do use our tax monies quite effectively.

For those familiar with the scriptural citation which introduces this report, there will remain the knowledge that a Moses did come along as a catalyst for the children of Israel. Yet from this observation post in 1982 it appears almost easier now to separate the Red Sea than to see how we can translate our own commitments to our patients and to the public at large into suitable and effective action.

J.H.F.

(For more on the Executive Council meeting see the President's Newsletter and the Committees and Organizations column.)

THE MICROCOSMIC EYE

Most physicians would agree that faith and hope are essential in patient care — to doctors as well as to patients. When the physician exhausts both the usual and the heroic means of therapy, patients still hope for the magical and the miraculous. They may deny their ailments and even come to consider the therapist as an etiologic vector. By a psychic switch responsibility for the nature of things is transferred to the individual who in treating is blamed for disrupting the delicate balance that was health.

Victims and especially their families may seek alternative diagnoses and cures, flying to far lands in search of deliverance or exploring other systems of

therapy claiming efficacy in many fields. As with Laetrile and earlier with Krebiozin, time teaches. But other forms of therapy and the expectation of new panaceas persist in the public imagination. If the ailment is not organic, good results will sometimes follow the enthusiastic embracing of such diverse modalities as cupping, foot zone therapy, the raisin cure, or rolfing. And if the process is organic, results may still be surprisingly good when conditions, such as rheumatoid arthritis or multiple sclerosis, are characterized by spontaneous remissions and relapses. When enthusiasm and coincidence collide, reputations can be made.

Because the House of Delegates of the AMA adopted at the 130th Annual Session in Chicago in June of last year Report F, Evaluation of Iridology, of the Council on Scientific Affairs, this alternative analytic technique for diagnosis should be examined. It offers an interesting example of the many such systems currently publicized by mouth, advertisement and book. The council concluded "that iridology has not yet been established as having any merit as a diagnostic procedure." Yet it is reported by Law¹ to be "very effective in the hands of a trained operator." Trained operators must be few and far between in view of the council's resolution.

What is iridology that we should be mindful of it? The practitioner of the art inspects the iris to determine the functional states of body organs which are represented in anatomically discrete regions in each iris and pupil. A specialist presumably would have to learn only that portion of the iridologic map having to do with his or her field. The right kidney is located in the right iris at about 5:40 o'clock, a.m. or p.m., and the left in the left at about 6:15. In the same zone more medially lies each adrenal and rimming the pupil are some portions of the bowel.

Alas for the amateur who would become quickly expert, the system does not work, as Simon, Worthen and Mitas² have clearly shown. Three ophthalmologists and three iridologists examined color photographs of both eyes of 148 patients, 48 with severe renal disease; neither group could tell which patients had kidney trouble.

Jensen³ tells us that there are four classifications of iridologic diagnosis, dependent on the color of the eyes. In blue eyes high (!) white and in brown eyes high yellow (!) indicate acute inflammation, while subacute inflammation is characterized by grayish white or slightly dull yellow hues in blue or brown eyes. Dark gray or very dull yellow reflect chronic conditions and black in either eye reveals degenerative or destructive processes. Color, tone, composition and form must be assessed so that the eye seems almost an art form. For those eager to learn more about iridology and other holistic systems than Law¹ provides, Kaslof³ has compiled a resource guide, complete with data about groups, organizations, centers, clinics, publications, products and services.

But why should we pursue iridology beyond the reach of everyday medical practice? Do we not as

physicians check pupillary responses, always aware of the Argyle-Robertson pupil of late syphilis, more frequent in the description than in the flesh? And do we not know that a miotic pupil may tell a tale of narcotic abuse or a dilated pupil of abuse of belladonna alkaloids? We must wonder too how an iridologist would cope with the syringomyelic patient with one blue eye and one green one, with the band keratopathy of hypercalcemia or the Lisch nodules (iris hamartomas) of neurofibromatosis?

There are behavioral implications too in knowing about pupils. Might not a person with Adie's pupils seeking sociopathically after surgery have had burr holes when the diagnosis was really Munchausen's syndrome? And don't forget the anatomic expression of the sudden — "wide-eyed with surprise!"

Pupillary dilatations have also attracted experimental psychologists seeking to assess the relative contributions of diligence, efficiency and capacity to intelligence. The pupillary response, dilatory to the presentation of a problem in mental arithmetic, is less marked when the subject is smarter.⁴ The more difficult the problem, the greater the dilatation. Speculation about the roles of nature and nurture in determining such evoked responses had best be left, however, to those who need no data to reach their conclusions.

J.H.F.

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THE EARTHLY FOOT

Over 70 years ago, H. W. Fowler and his brother, F. G., began work on *A Dictionary of Modern English Usage*. F. G. died in 1918 of tuberculosis, sharing only in the planning of this commentary, and is remembered primarily in H. W.'s moving dedication.

H. W. had little tolerance for slipshod English, for sloppy or overblown constructions which he considered sins against man and community. He realized that inexact symbols were poor tools for thought and that simple and direct expression was a surer way to virtue than obfuscations, euphemisms, genteelisms and double talk. The conscientious physician of any era would appreciate Fowler's adherence to rigorous standards in the use of language because it is paralleled in medicine where standards of excellence are under constant pressure.

Floods of phrases, haphazardly or cunningly constructed, tend to dilute our standards and to displace the coordinates of our daily lives. We need only look at today's medical practice, invaded by a host of "health providers." Health is now a commodity to be provided, not a biologic state dependent on nature and nurture. As such it can be made "new and improved"

by packaging and messages. Fowler would certainly have considered many of these messages genteelisms, "the substituting for the ordinary natural word . . . of a synonym that is thought to be less soiled by the lips of the common herd . . . less vulgar, less improper, less apt to come unhandsomely betwixt the wind and our nobility." For the normal word in his day, corn-cutter, he offers as genteelism, chiropodist, the use of which dates to 1785 according to the *Oxford English Dictionary* which considers it a factitious word for corn-cutter, treater of bunions and tender of toenails.

In our era of specialization, chiropody has achieved some status as a profession. In some parts of the country it has been further dignified by the granting of hospital privileges to its practitioners. Many, even most, chiropodists are well-trained and are considerably more than corn-cutters. If a genteelism implies unearned status, we might better look at the many branches of what is termed, genteelly, wholistic, holistic or heuristic healing. This is the domain occupied by such delightful specialties as Radionics, Macrobiosis, Anthroposophical Medicine and Radiesthesia-Psionic Medicine. A publication, the *Journal of Energy Medicine* (JEM), has been established for those interested in and seeking initiation into such mysteries.

Included among 10 Oriental Approaches to Health to be covered in JEM are acupuncture, yoga, karate and reflexology. Reflexology, the least publicized and presumably the least fashionable of these four, deserves some attention if only because the psychosexual significance of milady's high heel shoes has recently been emphasized by a chiropodic researcher. Reflexology (Foot Zone Therapy) is said to be an ancient Chinese technique lately rediscovered which assumes that specific areas of the soles are involved in the function of specific organs. Thus changes in posture caused by wearing high heels would then cer-

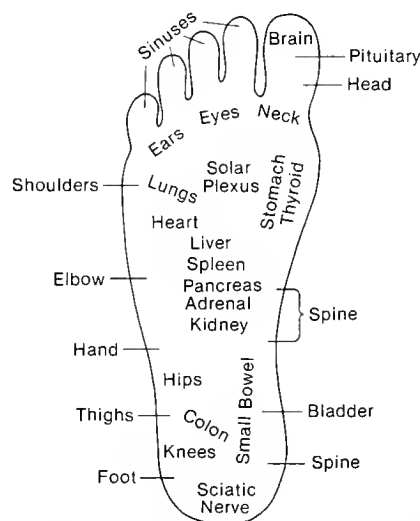


Fig. 1: Reflexologic map of the foot. Localizations seem to vary among practitioners, making for difficulty in assessing results. Note that gonads are not represented.

tainly affect the viscera, probably adversely. If such viscera are out of balance with their fellows, massage of the strategic spot ought to put things aright. The acupuncturist should be able to do the same by inserting a needle at the proper point but reflexology is easier to learn, non-invasive and considerably cheaper because you can do it yourself.

Diagnosis, at least in allopathic medicine, the variety we practice, should precede therapy. This may be one of the shortcomings of reflexology because when sensitive crystalline nodules in the soles of the feet are

not palpable, the deranged organ could be determined only with great difficulty. But the therapist can then look at the iris and find the faulty part. A map of the foot (Fig. 1) identifies areas for massage. If this sounds like some sort of foot fetish, remember that the feet of Chinese girls were bound from early childhood, that 60 years ago a lady's well-turned ankle was quite titillating and that high heels have been considered fetching since they were introduced by a Medici of the Florence Medicis.

J.H.F.

PLATO [427?-347 B.C.]

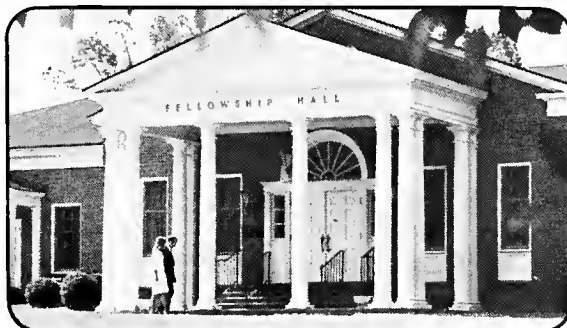
Cookery simulates the disguise of medicine, and pretends to know what food is the best for the body; and if the physician and the cook had to enter into a competition in which children were the judges, or men who had no more sense than children, as to which of them best understands the goodness or badness of food, the physician would be starved to death.

Gorgias, 465.B (tr. by Benjamin Jowett)

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Committees And Organizations

SUMMARY

EXECUTIVE COUNCIL

FRIDAY EVENING, FEBRUARY 5, 1982

The Executive Council, at its February 5, 1982, meeting unanimously approved a motion in keeping with a recommendation from the Committee on Finance that beginning January 1, 1983, the Society dues be increased for regular active members from \$140 to \$190; that dues for residents and interns be increased from \$10 to \$20; and dues for students be increased from \$3 to \$10.

The Executive Council also adopted a motion, following a discussion of the total amount of dues paid by members at the county, state and national level, to instruct the committee on finance to study the feasibility of paying annual dues in installments and report to the Council before January 1, 1983.

A motion was also adopted by the Executive Council instructing the committee on finance to study the feasibility of changing the fiscal year of the North Carolina Medical Society from July 1st through June 30th.

The amended budget for 1982 as presented by the chairman of the Committee on Finance was approved.

On recommendation of this committee, the Executive Council approved an additional expenditure to the amount already allocated for the purchase of word

processing equipment. Another motion also approved the expenditure of sufficient funds to purchase the appropriate photocopier machine.

The ad hoc Committee on Feasibility Study for Additional Floors to the North Carolina Medical Society Building presented a recommendation that the Executive Council recommend to the House of Delegates that the society proceed with the building of a third floor onto the headquarters building. After considerable discussion related to the desire of many council members for additional information, a motion was adopted that the recommendation be postponed definitely to the April 1982 Executive Council meeting for further discussion on the feasibility of building a third floor on the headquarters office building.

The Executive Council approved a motion that a three member Audit Committee become a standing committee of the society to serve staggered terms of three years so that one member shall be appointed by the president of the society each year to replace a member whose term is ending. The motion also included the provision that after 1982 (term of appointment ending in 1983) no member of the Audit Committee sit simultaneously on either the Committee on Personnel & Headquarters Operation or on the Committee on Finance.

(For more on the Executive Council meeting see the President's Newsletter and the Editorial column.)

JOHN MORGAN [1735-1789]

Young men ought to come well prepared for the study of Medicine, by having their minds enriched with all the aids they can receive from the languages, and the liberal arts. Latin and Greek are very necessary to be known by a Physician. The later contains the rich original treasures of ancient medical science, and of the first parents of the healing arts. The former contains all the wealth of more modern literature. It is the vehicle of knowledge in which the learned men of every nation in Europe choose to convey their sentiments, and communicate their discoveries to the world.

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INDICATIONS: Therapeutically (as an adjunct to systemic therapy when indicated), for bacterial infections, primary or secondary, due to susceptible organisms, as in: • infected cuts, skin grafts, surgical incisions, otitis externa • primary pyoderma (impetigo, eczema, sycosis vulgaris, paronychia) • secondarily infected dermatoses (eczema, herpes, seborrheic dermatitis) • traumatic lesions, inflamed or suppurating as a result of bacterial infection. Prophylactically the ointment may be used to prevent bacterial contamination in burns, skin grafts, incisions, and other clean lesions. For abrasions, minor cuts and wounds accidentally incurred, its use may prevent the development of infection and promote wound healing.

CONTRAINDICATIONS: Not for use in the eyes or in the external ear canal if the eardrum is perforated. This product is contraindicated in those individuals who have shown hypersensitivity to any of its components.

WARNING: Because of the potential hazard of nephrotoxicity and ototoxicity due to neomycin, care should be exercised when using this product in treating extensive burns, trophic ulceration and other extensive conditions where absorption of neo-

mycin is possible. In burns where more than 20 percent of the body surface is affected, especially if the patient has impaired renal function or is receiving other aminoglycoside antibiotics concurrently, not more than one application a day is recommended.

When using neomycin-containing products to control secondary infection in the chronic dermatoses, it should be borne in mind that the skin is more liable to become sensitized to many substances, including neomycin. The manifestation of sensitization to neomycin is usually a low grade reddening with swelling, dry scaling and itching; it may be manifest simply as a failure to heal. During long-term use of neomycin-containing products, periodic examination for such signs is advisable and the patient should be told to discontinue the product if they are observed. These symptoms regress quickly on withdrawing the medication. Neomycin-containing applications should be avoided for that patient thereafter.

PRECAUTIONS: As with other antibacterial preparations, prolonged use may result in overgrowth of nonsusceptible organisms, including fungi. Appropriate measures should be taken if this occurs.

ADVERSE REACTIONS: Neomycin is a not uncommon cutaneous sensitizer. Articles in the current literature indicate an increase in the prevalence of persons allergic to neomycin. Ototoxicity and nephrotoxicity have been reported (see Warning section). Complete literature available on request from Professional Services Dept. PML.



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The June Budget Session: A Status Report

Charlotte Ashcraft

The General Assembly is currently scheduled to reconvene for a "short" legislative session June 2, 1982, to deal primarily with budget issues. During the last budget session in October 1981 the legislature appropriated only one year of funding for a number of programs due to the uncertainty of the economy. In order to decide which programs will continue to receive funds and which will be eliminated or reduced, the legislature plans to examine some possible budget revisions in June.

When the state's 1981-82 budget was adopted, a 10.3% growth rate was used to project the available revenues for the fiscal year. Currently, the revenues are somewhat less than the projections indicated, and the Governor has reduced state spending in order to stay within the funds available. This over-anticipation of revenues, along with the items funded for one year, will result in the General Assembly's taking another look at the state's budget for the upcoming fiscal year.

Among the issues to be discussed in June are a number of health care items. The principle item on the health agenda is the Medicaid program. The Reagan Administration proposed major reductions in Medicaid, and Congress adopted most of them. These changes resulted in a loss of \$27 million to North Carolina's Medicaid program. These cuts will automatically rise to \$41 million next year under the bill adopted by Congress (Omnibus Budget Reconciliation Act of 1981) due to the provision which reduced federal financial participation in the cost of the program. The Medicaid reductions adopted in the 1981 session, if they are continued, should be sufficient to absorb the \$41 million loss in the next year.

Charlotte Ashcraft is a Fiscal Analyst with the North Carolina General Assembly's Fiscal Research Division.

However, the Reagan Administration has submitted Congress another list of proposed Medicaid reductions for the next federal fiscal year (October 1, 1982 - September 30, 1983). If these cuts are adopted, North Carolina will lose an additional \$41.7 million from the Medicaid program, for a total loss of \$82.7 million. The following is a list of the Administration's proposals and the estimated loss to the state's Medicaid program:

PRESIDENT REAGAN'S PROPOSED MEDICAID CHANGES

- (1) Reduce the federal match by three percent for optional services and beneficiaries (such as prescription drugs, intermediate care facilities, dental services and the medically needy population-age, blind and disabled). (\$31.5 million)*
- (2) Establish co-payments for Medicaid services (\$1/out-patient visit, \$2/inpatient day).
- (3) Allow states the flexibility to recover long term care costs from beneficiary estates and relatives.
- (4) Establish a combined welfare administrative program for the states by consolidating and reducing the administrative costs for the Medicaid, AFDC, and Food Stamp programs. The states now receive 50% of whatever they spend on administrative costs. (\$1.3 million)*
- (5) Eliminate federal matching for the state Medicare "buy-in" for Medicare Supplementary Medical Insurance. (\$6 million)*
- (6) Eliminate higher federal matching rates for programs such as family planning and nursing homes inspections. (\$2.9 million)*

* These numbers represent an estimate by the Division of Medical Assistance of the total program reduction required by each proposed change.

- (7) Phase in full state financial responsibility for erroneous payments. (Federal government would not reimburse states for payment made in error in excess of 3% in 1983, 2% in 1984, 1% in 1985, and 0% in 1986.)
- (8) Shorten the automatic extension of Medicaid eligibility from 4 months to 1 month for persons losing AFDC benefits due to increased earnings.

If Congress adopts these changes in the Medicaid program, it is estimated by the Reagan Administration to result in a savings of \$2 billion in FY 1983 to the federal government.

The Department of Human Resources' Division of Medical Assistance estimates the impact of these proposed changes to be a loss of \$41.7 million in North Carolina. It would take a state-county appropriation of \$15 million to make up this shortfall and avoid a \$41.7 million cut in services or groups of eligibles for the program.

In addition to the Medicaid program, the General Assembly will address the issue of the federal block grants. Three of these are in the area of health care: Preventive Health Block Grant, Maternal and Child Health Block Grant, and the Alcohol, Drug Abuse, and Mental Health Block Grant. The legislature has decided to use the normal appropriation process to allocate the block grant funds for the upcoming fiscal year. Therefore, the Governor will propose plans for spending the money; the General Assembly will review them and make the final decision by appropriating these block grants.

The largest of the health care block grants is the Maternal and Child Health Block Grant for which North Carolina currently receives \$9.5 million. This grant funds such programs as Crippled Children, Perinatal, Lead-base Paint Poisoning, and Family Planning Services. A decision must be made on the amount each of these programs funded by the block grant will receive.

The Alcohol, Drug Abuse, and Mental Health Block Grant funding level is presently \$9 million. This grant has the least flexibility of all of the block grants since 90% of all the funds must be distributed to those programs previously receiving these funds. But a decision must be reached on the allocation of the remaining 10% discretionary funds for next year.

The state now receives \$2.3 million for the Preventive Health Block Grant, which funds programs such as Emergency Medical Services, Hypertension Control, Fluoridation, Health Education and Risk Reduction, and Health Incentive Grants to Health Departments. These different categorical programs will be competing with each other for funds under this block grant. The General Assembly will examine each program and will make the appropriation decision for this block grant.

The Reagan Administration has proposed a reduction in funds for each of these block grants starting in October. A 9% cut is requested for the Preventive Health Block Grant, an 11% cut for the Alcohol, Drug Abuse, and Mental Health Block Grant, and a 23% cut in the Maternal and Child Health Block Grant. The President has also proposed consolidating the Women, Infants, and Children (WIC) nutrition program into the Maternal and Child Health Block Grants with a reduced funding level.

To date none of the President's budget proposals have been acted upon by Congress due to the current stalemate over a total compromise budget package, including tax hikes and overall spending reductions. Unless an agreement is reached shortly, it may be safe to assume that the 1982 funding levels will be available for each of these federal health programs.

In any event, the General Assembly will reconvene in June to resolve these and other state budget decisions. The economic situation will be the key to the final outcome of this upcoming appropriations session.

From The Desk of The Managing Editor

WHAT IS NORTH CAROLINA DOING ABOUT HAZARDOUS WASTE?

What Are Hazardous Wastes?

The Resource Conservation and Recovery Act of 1976, under which hazardous substances are regulated, defines a hazardous waste as "a solid waste, or combination of solid wastes, which because of its quantity, concentration or physical, chemical or infectious characteristics may:

- cause or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible illness.

- pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, disposed of, or otherwise managed."

These waste materials can be either solids, liquids, sludges, or contained gases. A hazardous waste has at least one of four characteristics: ignitability, corrosivity, reactivity or toxicity.

Ignitable wastes, as the name indicates, catch fire easily and as a result normally are segregated from other waste materials. Fires involving hazardous substances are dangerous not only because they may generate heat and toxic smoke, but also because they can spread harmful particles over large areas. Examples: discarded organic solvents such as toluene and benzene, oils, plasticizers, some pesticides and paint and varnish removers.

Corrosive wastes are substances that erode materials and damage living tissues by chemical action. They are of particular concern to persons who haul and dispose of waste because by corroding containers they can cause leakage. Examples: alkaline cleaners, acid liquids used in etching, and wastes from battery production.

Reactive wastes may react spontaneously, react vigorously with air or water, be unstable to shock or heat, generate toxic gases, or explode. Examples: obsolete munitions and manufacturing wastes from the explosives and chemical industries.

Toxic wastes are any substance (solid, liquid, or gas) that are poisonous to living beings. If they are improperly handled, these wastes or their by-products may be released into the atmosphere to the detriment of human health, particularly through the contamination of ground water. Not all hazardous wastes are toxic, but all toxic wastes are potentially hazardous. Examples: pesticides, arsenic and cadmium, and their salts.

Radioactive wastes may be high- or low-level and are proved health hazards of varying degrees. As-

essment of the damages they cause is difficult and the subject of much debate. Certainly, "high-level" radioactive wastes from nuclear power plants and weapons are very dangerous. On the other hand, research labs, hospitals, educational institutions, and industry generate what is considered "low-level" radioactive waste.

Health Effects

Improper management of hazardous waste can be dangerous to the public health. However, degree of risk is difficult to determine because the toxic effects of many chemicals are unknown and may not be evident for years after exposure. While efforts continue in the research of potential health effects of hazardous waste, some are known.

Acute effects include those which result from a single exposure, as inhalation of toxic fumes or the absorption of toxins through the skin. Some common



Signs like this are found on N.C. Highway 210 in Johnston County.

acute effects are skin and eye irritation, headaches, nausea, dizziness, blurred vision, and tremors.

Some chemicals are carcinogenic in animals but there is disagreement as to risk in humans. The amount of an agent required to induce malignancy in humans is unknown.

Birth defects in animals have been found when certain chemicals have been fed to mothers, and the same might occur in humans. In fact, many cases in which exposure to a toxic chemical has resulted in birth defects have been reported. Some of these agents are mutagenic, which could pose the greatest threat in the future from mismanagement of hazardous waste.

While the human body appears to have adapted to the natural level of radioactivity from the earth and cosmic rays, many questions remain as to the amount of additional exposure that can be considered safe. And although there is much discussion on how radiation produces cancer, certain levels have been related to certain effects.

Radiation sickness:	rapid doses of 100,000 millirems to organs and intestinal tract
Cataract development:	doses over 200,000 millirems
Sterility:	doses over 300,000 millirems to the gonads
Death:	whole body doses of around 500,000 millirems when not counteracted medically can kill 50% of the people exposed in a few days or weeks

These are unlikely to be generated from current low-level waste producers, radiation in smaller doses can conceivably result in damage to unborn babies, chromosome breakage, and mutations, although no direct relationship has been proven.

Hazardous Wastes In North Carolina

In compliance with the federal Resource Conservation and Recovery Act 1,400 businesses and industries in North Carolina which generate more than 2,200 pounds of hazardous waste per month registered last year with the Environmental Protection Agency. North Carolina ranks 11th among the 50 states in the total volume of hazardous wastes. However, small generators are not yet included in the federal system set up to monitor wastes, and 120 million gallons a year are produced in the state. Although such waste is produced in all but 10 counties in our state, the Charlotte-Mecklenburg, Greensboro-High Point, and Wilmington areas generate a disproportionate amount of our total waste. (See map.)

In 1979 North Carolina ranked fourth in the United States in the production of low-level radioactive waste. At that time, 1,782,940 gallons, containing 12,158 curies of low-level radioactive waste, were produced, 20% of the total volume and over 98% of the

radioactivity of Carolina Power & Light Company's Brunswick County nuclear plant and General Electric's fuel fabrication factory near Wilmington; the remaining 10% by volume and less than 2% of the radioactivity, by research labs, hospitals, colleges and universities throughout the state.

Until recently North Carolina, having no approved facilities for the treatment and disposal of hazardous waste, relied upon other states' facilities. However, most states are now reducing the amount of waste they will accept, so each state must make efforts to manage its own. In March of this year both South Carolina and Washington, the two states which store all of North Carolina's low-level radioactive waste, began measures to restrict the amount of waste they will accept. This will impose great difficulties upon the state's hospitals and research labs and may mean the building of a local facility.

Waste Management

In North Carolina: The Physician's Role

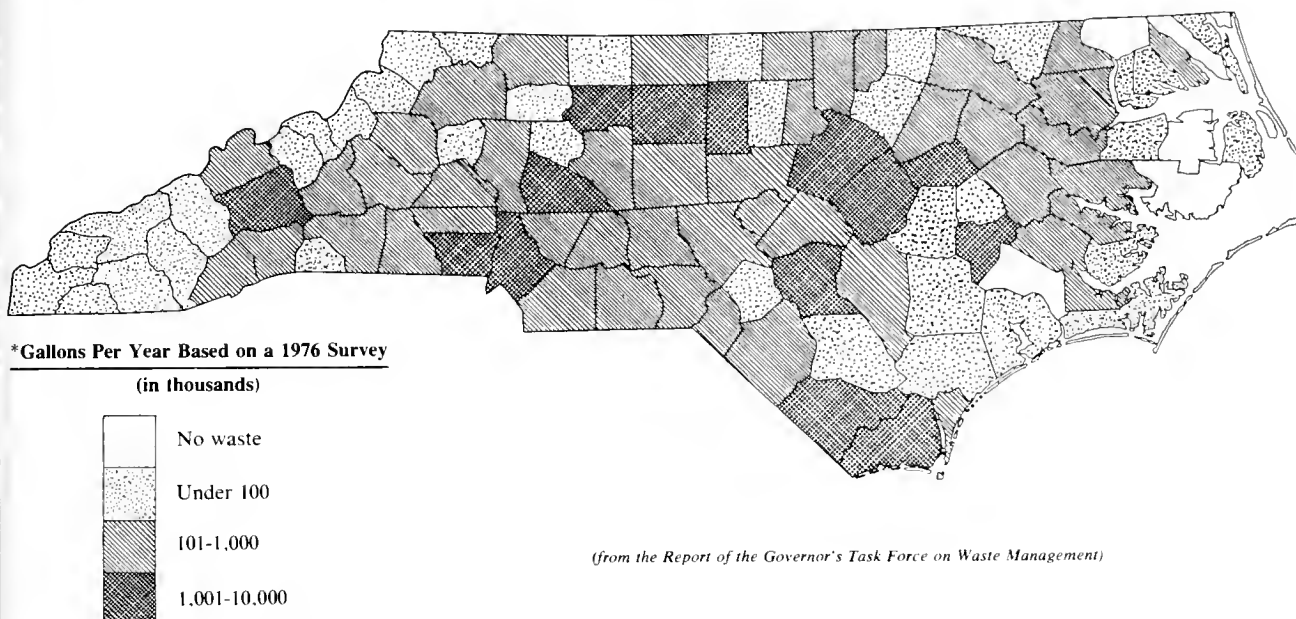
North Carolina is the first state in the nation to receive interim authority from the Environmental Protection Agency to assume its own regulatory program of granting permits for storing, treating, or disposing of hazardous wastes. This is the responsibility of the Solid and Hazardous Waste Branch in the Division of Health Services of the Department of Human Resources.

Mr. O. W. Strickland, head of the Solid and Hazardous Waste Branch, expects that a medical toxicologist will soon be on staff to help determine the potential health risks of such wastes. Mr. Strickland adds that his department and industry hope to work together to provide communities with information identifying known toxic substances, how they affect health, and how they may interact to produce or modify existing disease. Government, industry and health care personnel must also combine efforts in the development and application of emergency plans.

Complicating the issue is the fact that so little toxicity data are available. And, while the North Carolina Waste Management Act of 1981 (which mandates regulation of hazardous wastes) is considered model legislation, it does not address the problem of identifying and cleaning up existing and abandoned disposal sites. In February of this year state health officials listed 167 possible hazardous waste sites. More than 100 were unidentified before a 1980 federal law which required the reporting of waste dumps. Ron H. Levine, M.D., State Health Director, said that these sites may or may not contain hazardous wastes and that they would be inspected to determine if they should be cleaned up or monitored.

The National Toxicology Program, the (state) Toxic Substances Project, private research groups such as the Chemical Industry Institute of Toxicology, and industry itself are accumulating data. Dr. Don Huisingh of the Toxic Substances Project reports that his group is not only compiling data but also publishing

PROJECTED CURRENT VOLUME OF HAZARDOUS WASTE GENERATED IN THE COUNTIES OF NORTH CAROLINA*



profiles of toxic chemicals and contributing to a common data base, the Chemical Substances Information Network. Dr. Huisingh noted that North Carolina is the first and only state now a part of this computer network, and that anyone seeking information on chemical substances can use the network by contacting the State Department of Human Resources.

While developing standards for the selection of sites for dumping waste is central to these programs, the status of abandoned and existing sites is also of primary concern to the public health. Upon the identification of the sites and the possible routes of contamination of populations, physicians can be expected to determine effects on health, toxicologic information, tests to recognize effects of chemicals in humans (the Love Canal incident made evident the extreme difficulty in determining who had been exposed and for how long), tests for chemical mixtures, and clinical and epidemiological studies are all necessary in the evaluation of health hazards.

As information is obtained, the question of what constitutes unreasonable risk remains. Criteria for defining health hazards, for selecting waste dump sites, and for protecting on-site workers need to be established as do procedures for the evaluation of hazardous waste management policy. In addition, with regard to emergencies and to existing and abandoned sites, health care professionals can help develop a registry of exposed people and devise methods for follow-up.

Reaction to the waste management problem is often highly emotional. An informed public is a responsible one. Physicians can help provide adequate information and the tools to compile the information and share this data. Although the physician's role at all levels of hazardous waste management is important, it is critical as seeker and provider of sound objective data for practical reasoning and evaluation.

A.A.H.

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In-State

May 21-22

"Sexually Transmitted Diseases"

Place: UNC School of Medicine

Info: Fred Sparling, M.D., UNC School of Medicine, Depart-
ment of Bacteriology, Chapel Hill, NC 27514

May 22-23

"Respiratory Care — Breath of Spring '82"

Place: Bowman Gray School of Medicine

Fee: \$35

Credit: 9 hours

Info: Emery C. Miller, M.D., Associate Dean of Continuing
Education, Bowman Gray School of Medicine, 300 South
Hawthorne Road, Winston-Salem, NC 27103, 919-748-
4450

May 28-30

"Laparoscopic Technique"

Place: Wrightsville Beach

Credit: 12½ hours

Info: Office of Continuing Medical Education, 231 MacNider
Bldg.-202 H, UNC School of Medicine, Chapel Hill, NC
27514, 919-962-2218

June 9

"Modern Care of the Heart Attack Victim"

Place: Greenville

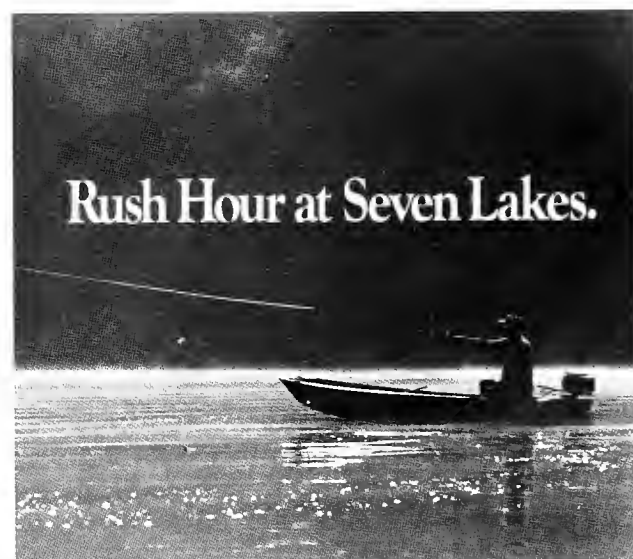
Fee: \$50

Credit: 6½ hours, AAFP applied for

Info: Edwin W. Monroe, M.D., East Carolina University School
of Medicine, Box 7224, Greenville, NC 27834, 919-758-
5200

What? When? Where?

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Indications

Cyclacillin has less *in vitro* activity than other drugs in the ampicillin class and its use should be confined to these indications: Treatment of the following infections:

RESPIRATORY TRACT

Tonsillitis and pharyngitis caused by Group A beta-hemolytic streptococci

Bronchitis and pneumonia caused by *S. pneumoniae* (formerly *D. pneumoniae*)

Otitis media caused by *S. pneumoniae* (formerly *D. pneumoniae*) and *H. influenzae*

Acute exacerbation of chronic bronchitis caused by *H. influenzae**

*Though clinical improvement has been shown, bacteriologic cures cannot be expected in all patients with chronic respiratory disease due to *H. influenzae*

SKIN AND SKIN STRUCTURES (integumentary) infections caused by Group A beta-hemolytic streptococci and staphylococci, non-penicillinase producers.

URINARY TRACT INFECTIONS caused by *E. coli* and *P. mirabilis*. (This drug should not be used in any *E. coli* and *P. mirabilis* infections other than urinary tract.)

NOTE: Perform cultures and susceptibility tests initially and during treatment to monitor effectiveness of therapy and susceptibility of bacteria. Therapy may be instituted prior to results of sensitivity testing.

Contraindications Contraindicated in individuals with history of an allergic reaction to penicillins

Warnings Cyclacillin should only be prescribed for the indications listed herein.

Cyclacillin has less *in vitro* activity than other drugs of the ampicillin class. However, clinical trials demonstrated it is efficacious for recommended indications.

Serious and occasional fatal hypersensitivity (anaphylactoid) reactions have been reported in patients on penicillin. Although anaphylaxis is more frequent following parenteral use, it has occurred in patients on oral penicillins. These reactions are more apt to occur in individuals with history of sensitivity to multiple allergens. There are reports of patients with history of penicillin hypersensitivity reactions who experienced severe hypersensitivity reactions when treated with a cephalosporin. Before penicillin therapy, carefully inquire about previous hypersensitivity reactions to penicillins, cephalosporins and other allergens. If allergic reaction occurs, discontinue drug and initiate appropriate therapy. Serious anaphylactoid reactions require immediate emergency treatment with epinephrine. Oxygen, I.V. steroids, airway management, including intubation, should also be administered as indicated.

Precautions Prolonged use of antibiotics may promote overgrowth of nonsusceptible organisms. If superinfection occurs, take appropriate measures.

PREGNANCY: Pregnancy Category B. Reproduction studies performed in mice and rats at doses up to 10 times the human dose revealed no evidence of impaired fertility or harm to the fetus due to cyclacillin. There are, however, no adequate and well-controlled studies in pregnant women. Because animal reproduction studies are not always predictive of human response, use this drug during pregnancy only if clearly needed.

NURSING MOTHERS: It is not known whether this drug is excreted in human milk. Because many drugs are, exercise caution when cyclacillin is given to a nursing woman.

Adverse Reactions Oral cyclacillin is generally well tolerated. As with other penicillins, untoward sensitivity reactions are likely, particularly in those who previously demonstrated penicillin hypersensitivity or with history of allergy, asthma, hay fever, or urticaria. Adverse reactions reported with cyclacillin: diarrhea (in approximately 1 out of 20 patients treated), nausea and vomiting (in approximately 1 in 50), and skin rash (in approximately 1 in 60). Isolated instances of headache, dizziness, abdominal pain, vaginitis, and urticaria have been reported. (See **WARNINGS**) Other less frequent adverse reactions which may occur and are reported with other penicillins are anemia, thrombocytopenia, thrombocytopenic purpura, leukopenia, neutropenia and eosinophilia. These reactions are usually reversible on discontinuation of therapy.

As with other semisynthetic penicillins, SGOT elevations have been reported.

As with antibiotic therapy generally, continue treatment at least 48 to 72 hours after patient becomes asymptomatic or until bacterial eradication is evidenced. In Group A beta-hemolytic streptococcal infections, at least 10 days' treatment is recommended to guard against risk of rheumatic fever or glomerulonephritis. In chronic urinary tract infection, frequent bacteriologic and clinical appraisal is necessary during therapy and possibly for several months after. Persistent infection may require treatment for several weeks.

Cyclacillin is not indicated in children under 2 months of age.

Patients with Renal Failure: Cyclacillin may be safely administered to patients with reduced renal function. Due to prolonged serum half-life, patients with various degrees of renal impairment may require change in dosage level (see **DOSAGE AND ADMINISTRATION** in package insert).

Dosage (Give in equally spaced doses)

INFECTION	ADULTS	CHILDREN*
Respiratory Tract		
Tonsillitis & Pharyngitis	250 mg q.i.d.	body weight < 20 kg (44 lbs) 125 mg q.i.d. body weight > 20 kg (44 lbs) 250 mg q.i.d.
Bronchitis and Pneumonia		
Mild or Moderate Infections	250 mg q.i.d.	50 mg/kg/day q.i.d.
Chronic Infections	500 mg q.i.d.	100 mg/kg/day q.i.d.
Otitis Media	250 mg to 500 mg q.i.d.†	50 to 100 mg/kg/day†
Skin & Skin Structures	250 mg to 500 mg q.i.d.†	50 to 100 mg/kg/day†
Urinary Tract	500 mg q.i.d.	100 mg/kg/day

*Dosage should not result in a dose higher than that for adults, depending on severity

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1. Ginsburg CM, McCracken GH Jr, Zweighaft TC, Chhsen JC: Comparative pharmacokinetics of cyclacillin and amoxicillin in infants and children. *Antimicrob Ag Chemother* 14:1086-1088 (June) 1981.

2. Multicenter trials. Data to be published.

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See important information on adjoining column.

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June 10-11

"Sixth Annual Family Medicine Conference Day: A Presentation of Clinical and Behavioral Scholarship in Family Medicine"

Place: Chapel Hill

Credit: 6 hours (pending)

Info: Peter Curtis, M.D., Department of Family Medicine, University of North Carolina, Trailer 15-269H, Chapel Hill, NC 27514, 919-966-3385

June 17-19

"The 29th Annual Session Mountaintop Medical Assembly"

Place: Waynesville

Info: Clinton L. Border, Jr., M.D., F.A.C.S., Box 538, Waynesville, NC 28786, 704-627-9677

July 8-10

"Fourth Annual Mountain Meeting"

Place: Asheville

Fee: \$125

Credit: 12 hours

Info: Emery C. Miller, M.D., Associate Dean of Continuing Education, Bowman Gray School of Medicine, 300 South Hawthorne Road, Winston-Salem, NC 27103, 919-748-4450

July 26-30

"Diagnostic Imaging Postgraduate Course"

Place: Atlantic Beach

Fee: \$375 (\$200 if in training)

Credit: 25 hours

Info: Donald R. Kirks, M.D., Program Director, Department of Radiology — Box 3834, Duke University Medical Center, Durham, NC 27710

Out-of-State-Southeastern Region**May 20-22**

"The North Carolina Chapter of the American College of Surgeons"

Place: Myrtle Beach, South Carolina

Info: Richard W. Furman, M.D., 702 State Farm Road, Boone, NC 28607, 704-264-2340

May 21-22

"Current Management of Atherosclerotic Vascular Disease"

Place: Myrtle Beach, South Carolina

Info: Emery C. Miller, M.D., Associate Dean of Continuing Education, Bowman Gray School of Medicine, 300 South Hawthorne Road, Winston-Salem, NC 27103, 919-748-4450

June 10-12

"Rehabilitation of the Brain-Injured Adult"

Place: Williamsburg, Virginia

Info: Ellen F. Walsh, School of Allied Health Professions, Box 233, MCV Station, Richmond, VA 23298, 804-231-9011

June 10-13

"Dermatology for Non-Dermatologists"

Place: Myrtle Beach, South Carolina

Fee: \$295

Credit: 14 hours, AAFP

Info: "Dermatology for Non-Dermatologists," Box 2987, Duke Medical Center, Durham, NC 27710, 919-684-2504

June 11-13

"Arrhythmias and Cardiac Ischemia: Diagnoses and Management"

Place: Virginia Beach, Virginia

Fee: \$245

Credit: 13 hours, Category I; 13 hours, AAFP

Info: International Medical Education Corp., 64 Inverness Drive, East, Englewood, Colo. 80112, 800-525-8651

June 14-July 8

"Ethics and Public Policy in Health Care"

Place: Charlottesville, Virginia

Info: Professions Program, Division of Fellowships and Seminars, National Endowment for the Humanities, Washington, D.C., 20506

June 23-26

"Ninth Annual Arts and Sciences of Sports Medicine"

Place: Charlottesville, Virginia

Info: Frank C. McCue, III, M.D., Box 243, University of Virginia Medical Center, Charlottesville, VA 22908, 804-924-2083

June 24-26

"American Cancer Society National Conference: The Primary Care Physician and Cancer"

Place: Washington, D.C.

Fee: none

Credit: 17½ hours, Category I; 17½ hours, AAFP

Info: Nicholas G. Bottiglieri, M.D., American Cancer Society National Conference: The Primary Care Physician and Cancer, 777 Third Avenue, New York, NY 10017

July 7-10

"Cardiology 1982: A Comprehensive Review of the Latest Techniques and Developments in the Field of Cardiology for the Practicing Cardiologist/Internist"

Place: Knoxville, Tennessee

Info: Extramural Programs Dept., American College of Cardiology, 911 Old Georgetown Road, Bethesda, MD 20014

July 12-14

"Clinical Gastroenterology"

Place: Hilton Head, South Carolina

Fee: \$200

Credit: 12 hours

Info: Emery C. Miller, M.D., Associate Dean of Continuing Education, Bowman Gray School of Medicine, 300 South Hawthorne Road, Winston-Salem, NC 27103, 919-748-4450

July 27-31

"Fifth Annual Symposium on Contemporary Clinical Neurology"

Place: Hilton Head Island, South Carolina

Info: Mrs. Joan Sullivan, Dept. of Neurology, Vanderbilt University School of Medicine, Nashville, TN 37212

August 2-7

"Tenth Annual Beach Workshop"

Place: Myrtle Beach, South Carolina

Fee: \$175

Credit: 20 hours

Info: Emery C. Miller, M.D., Associate Dean of Continuing Education, Bowman Gray School of Medicine, 300 South Hawthorne Road, Winston-Salem, NC 27103, 919-748-4450

August 13-14

"EKG Interpretation and Arrhythmia Management"

Place: Nashville, Tennessee

Fee: \$245

Credit: 13 hours, Category I; 13 hours, AAFP

Info: IMEC, Division of Postgraduate Education, 64 Inverness Drive East, Englewood, Colo 80112, 800-525-8651

The items listed in the above column are for the three months immediately following the month of publication. Requests for listing



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should be received by "WHAT? WHEN? WHERE?", P.O. Box 27167, Raleigh, NC 27611, two months prior to the month in which they are to appear. A "request for listing" form is available upon request.

News Notes

University of N.C. School of Medicine And N.C. Memorial Hospital

A unique arrangement has been established between Lakeview Manor, a nursing home in Chapel Hill, and the Department of Family Medicine.

Dr. Philip Sloane, assistant professor of family medicine, has assumed the responsibilities of medical

director for Lakeview Manor, an intermediate care nursing home, and will oversee the care for all of the facility's patients. In addition, individual faculty members and residents from the Department of Family Medicine will serve as personal physicians for new nursing home patients.

"The arrangement should have benefits for both Lakeview Manor and the Department of Family Medicine," Sloane said. He explained that faculty and residents from the department will visit Lakeview Manor every Friday morning to check on patients; a member of the Department of Family Medicine will be on call 24 hours a day.

If a resident of Lakeview Manor requires hospitalization at North Carolina Memorial, he or she can be cared for by the same physician who was responsible for the patient's care at Lakeview.

"We are very pleased with this arrangement," said J. G. Cicatko Jr., administrator of Lakeview Manor. "It's rather unique to have a physician in your facility

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on hypertension
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every Friday when Medicaid regulations say they only need to be here every 60 days," he continued.

"Nursing homes are a much misunderstood element of our health care system," Sloane said.

There are now more nursing home beds than hospital beds in the United States and more than 20% of the elderly will spend some time in a nursing home.

"In North Carolina, nursing homes are a major provider of institutional care, with more than 40% of Medicaid funds going to nursing home patients," he continued. "In spite of these facts, educational activities in nursing homes are relatively new."

Both Sloane and Cicatko agreed that being able to use Lakeview Manor as a clinical site for teaching medical students and residents is an important way of exposing them to geriatric medicine and of demonstrating the special needs of institutionalized elderly.

Sloane has been a faculty member at the University since 1979. He has written several articles about nursing homes and was a member of the task force on geriatric education of the Society of Teachers of Family Medicine.

Scientists at the University of North Carolina at Chapel Hill have found new evidence that oral con-

traceptives that contain progestin hormones in addition to estrogen can help protect women from cancer of the uterus lining.

Their study shows that women who don't use combination product oral contraceptives have at least twice the risk of developing endometrial cancer as those who do.

The protective effect of the contraceptives increases the longer they are used and decreases over time once they have been discontinued, according to the report.

Authors of the study are Drs. Barbara S. Hulka, Lloyd E. Chambless and Bernard G. Greenberg of the UNC School of Public Health and Drs. David G. Kaufman and Wesley C. Fowler of the School of Medicine.

Dr. Hulka, a professor of epidemiology, said the findings do not mean that women should begin taking these oral contraceptives in hope of avoiding endometrial cancer.

"Because endometrial cancer is even less than the uncommon side effect of oral contraceptives which is the occasional formation of blood clots," she explained. "Normally, this cancer is a disease of older women after they have stopped menstruating."

Instead, she said the results support the belief of



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some scientists that progestin hormones should be a part of any estrogen replacement therapy during or following menopause.

Estrogens are frequently prescribed for menopausal and post-menopausal women to control such disturbing symptoms as hot flashes and depression. But both doctors and patients have been concerned about recent reports linking estrogen with an increased risk of endometrial cancer.

"With all the publicity about this link and the appropriate concern that has followed, there may be a tendency for people to suspect that any kind of hormone might be harmful," Dr. Hulka said. "But here we have shown that progestin actually has a protective effect on the lining of the uterus."

The study involved comparing information from 79 patients who had had endometrial cancer with information from 203 women who had not.

Overall, 15.3% of the control subjects had used oral contraceptives that included progestin for at least six

months, but only 6.3% of the cancer patients had used similar products for the same period.

Analysis of the data, which were collected over seven years, also showed that oral contraceptives composed predominantly of progestin were more protective than compounds that were predominantly estrogens.

Five members of the university community have been elected fellows of the American Association for the Advancement of Science, including the chancellor and three other members of the School of Medicine faculty.

Elected fellows in January were: Chancellor Christopher C. Fordham III, also professor of medicine and social and administrative medicine; Dr. Stuart Bondurant, dean of the School of Medicine and professor of medicine; Dr. Carl W. Gottschalk, Kenan professor of medicine and physiology; Dr. Cecil G.

In 1977, when
the Veterans Administration
compared Step-2
regimens in 450 mild
hypertensive patients,
which regimen was
proven most effective?



Sheps, Taylor Grandy Distinguished professor of social and administrative medicine and professor of family medicine, and Dr. John M. Dennison, professor of geology.

The AAAS, formed in 1848, is the nation's largest general scientific organization. Members of the AAAS nominated for fellowships are described as those "whose efforts on behalf of the advancement of science or its applications are scientifically or socially distinguished."

Fordham, a UNC-CH alumnus, first joined the UNC-CH faculty in 1958 and was vice chancellor for health affairs before becoming the University's sixth chancellor in 1980. He also is former dean of the UNC-CH School of Medicine.

Fordham is a member of numerous professional organizations and in 1981 was honored with distinguished service awards from both the N.C. Hospital Association and the N.C. Academy of General Dentistry.

Bondurant, a UNC-CH alumnus, joined the faculty in 1979 as dean of the School of Medicine. In 1981 Bondurant was among nine physicians named masters of the American College of Physicians, and also was named a fellow to the Royal Academy of Physicians (Edinburgh).

He is past president of the ACP (1980-81) and past chairman of the Council of Deans (1979-80).

Gottschalk, a member of the School of Medicine faculty since 1952, is one of the world's foremost kidney researchers. He has been influential in national

planning for dialysis and kidney transplants and is internationally known for the development of micro-puncture techniques that have shed light on how the kidney functions.

He was named a career investigator by the American Heart Association in 1961 and a Kenan professor in 1969. He was elected to the National Academy of Sciences in 1975.

Sheps first joined the faculty in 1947. After an absence of 15 years, he returned in 1968 to become the first director of the UNC-CH Health Services Research Center and, in 1971, was named vice chancellor for health sciences.

Sheps' research interests are in primary health care, reform in health education and evaluation of health care programs. This year, he received a special citation from the new medical school at Ben Gurion University in Israel for his work as a consultant to the school.

Dennison, a member of the UNC-CH geology faculty since 1967, specializes in stratigraphy and geostatistics. His current work involves exploring the Blue Ridge and Great Smoky Mountains for natural gas.

W. Bonner Guilford, assistant professor of radiology, was invited to speak at the Diabetes Research and Training Center, University of Virginia, Jan. 18. The title of his seminar was "Monckberg's Sclerosis: Possible role in the development of peripheral microangiopathy in diabetes mellitus."

Frank C. Wilson, professor of surgery, Walter Greene, associate professor of surgery and Campbell McMillan, professor of pediatrics, lectured at the meeting of the American Academy of Orthopaedic Surgeons in New Orleans on "The Management of Musculo-skeletal Problems in Hemophilia." Wilson, Greene and William Anderson, a resident in orthopaedics, also presented a paper and an exhibit on "Fractures of the Diaphysis of the Radius and Ulna in Adults," Jan. 19-26.

William McCartney, associate professor of radiology, attended the 8th annual meeting and nuclear medicine educational seminar sponsored by the American College of Nuclear Physicians. He was appointed chairman of the awards committee and participated as a delegate in the ACNP House of Delegates.

John J. Aluise, lecturer in family medicine, presented a medical practice management workshop for physicians and their spouses. Topics included were: preparations for the first year of practice, personnel management, financial management, patient-staff-physician relationships, stress in the professional

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family, telephone communication and leadership and supervision in the practice, at Creighton University, on Jan. 29-30.

James N. Hayward, professor of neurology, was an invited speaker at the Gordon Research Conference on Cardiovascular Role of Brain Angiotensin and other Peptide Hormones, Feb. 8-12, in Ventura, Calif.

Phil Webster, professor of pathology, spoke at the family medicine grand rounds at St. Elizabeth Hospital Medical Center. His topic was "Head and Neck Oncology: an Interface," March 19, in Youngstown, Ohio.

Helen Cronenberger, associate professor of medical allied health professions, recently wrote a chapter

for a book titled, "Clinical Laboratory Science Education," published by the American Society for Medical Technology.

Henry R. Lesesne, associate professor of medicine, was a member of the program faculty at the Third International Symposium on Continuing Medical Education, Feb. 23-March 4, in Limuru, Kenya.

Betty E. Cogswell, associate professor of family medicine, has been elected First Vice President of the Committee on Family Research of the International Sociological Association to serve a four year term from 1982-86.

John A. Ewing, professor of psychiatry, has been named vice chairman and a trustee of the Mary Cullen

in 1979, when results were published for the five-year, 10,000-patient Hypertension Detection and Follow-up Program (HDFP study), which Step-2 regimen was preferred and was deemed effective without significant adverse effects?²



Research Trust, a non-profit foundation devoted to studies in the causes of alcoholism.

David E. Millhorn, instructor in physiology, has recently been named an Established Investigator of the American Heart Association (1982-1987). The award was given for his research on "the role of the ventral medulla in the regulation of respiration and cardiovascular function."

East Carolina University School of Medicine

Dr. Dennis R. Sinar, associate professor of medicine, has received a \$58,581 grant from Hoffman-LaRoche, Inc. to study "The Effects of Ro 21-6937 (tri-methyldeoxy PGE₂) on the Healing of Endoscopically-Proven Duodenal Ulcers — A Single-Blind Parallel Study." The project will investigate the medication's effect on acid secretions in patients with duodenal ulcers.

A memorial fund to support an annual lecture at the East Carolina University School of Medicine has been

established by Mrs. Vincent P. Fagan Jr. of Greenville.

The Vincent P. Fagan Jr. Memorial Lecture will be presented by a prominent authority in medicine on recent advances in medical science and new clinical applications.

The selection of the speaker will reflect Mrs. Fagan's request to emphasize advances in the diagnosis and treatment of aneurysms in view of her husband's death from a ruptured cerebral aneurysm.

"We are grateful to Mrs. Fagan for this special reason for bringing medical leaders to the school," said medical school Dean William E. Laupus.

"Our faculty, residents and students, as well as physicians throughout the region, will appreciate her generosity and thoughtfulness in the years to come as the lecture becomes a prominent annual event at the school. We are pleased to be a part of her memorial effort."

Laupus also recognized Greenville attorney Phillip R. Dixon for assisting Mrs. Fagan and the medical school in the establishment of the fund.

The topic and speaker for the Fagan Lecture will be selected by a committee appointed by Dean Laupus. It will be the featured lecture at one of the school's continuing medical education programs.

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Two members of the Department of Pediatrics presented an evaluation of neonatal stabilization at the Ninth Annual Southern Perinatal Association Meeting held recently in New Orleans.

Drs. Arthur E. Kopelman, professor, and Stephen Engelke, assistant professor, presented "Evaluation of Neonatal Stabilization at Community Hospitals and of a Regional Transport Program."

In addition, Kopelman authored a chapter titled "Care of the High Risk Neonate" which appears in the book *Current Therapy*. The book is edited by Dr. Howard F. Conn.

Dr. Irvin L. Blose, professor of psychiatric medicine, attended the American Medical Society on Alcoholism's meeting in West Palm Beach, Fla., on February 19. Blose presented "The Professionals and Chemical Dependency" to the society.

The Department of Pediatrics' Humanities Section has received \$13,433 in matching funds from the N.C. Humanities Committee to sponsor a symposium in March 1983. The symposium, titled "Moral Choice and Medical Crisis," will examine the competence, consent and allocation of resources in critical care medicine.

Two new faculty members have joined the School of Medicine's Department of Family Medicine.

Dr. Harold Kallman has been appointed professor and director of geriatric training at the medical school's Eastern Carolina Family Practice Center. He formerly was associate clinical professor of family medicine at the College of Medicine and Dentistry-Rutgers with responsibility for the Rutgers geriatric program. A native of New York, Kallman was also in group family practice in Edison, N.J. Kallman is a

In 1980, when the Joint National Committee on Detection, Evaluation, and Treatment of High Blood Pressure published their recommendations, which Step-2 regimen best met their criteria for effectiveness, safety, simplicity of titration, convenience, and economy?³



charter fellow of the American Academy of Family Physicians and has served on numerous committees on aging, mental health and medical education. He is a past president of the New Jersey Academy of Family Practice.

He received his undergraduate degree from City College of New York and his medical degree from New York University College of Medicine. He completed residency training at Kings County Hospital, Brooklyn, N.Y., and the U.S. Naval Hospital, Key West, Fla. He also completed a fellowship in cardiology sponsored by the National Institutes of Health.

Dr. Charles H. Duckett also has joined the Department of Family Medicine as professor and director of graduate education. Prior to his appointment at East Carolina University, Duckett was associate professor of family medicine and director of the family practice residency program at the Bowman Gray School of Medicine.

A native of Canton, N.C., Duckett received his

undergraduate degree from Wake Forest College and his medical degree from Bowman Gray. He completed postgraduate training at the University of Virginia Hospital, Charlottesville.

Also a charter fellow of the American Academy of Family Physicians, Duckett was in private practice for 17 years in Canton. He has held numerous leadership positions in the N.C. Academy of Family Physicians, including president of the group. He is past president of the academy's board of directors.

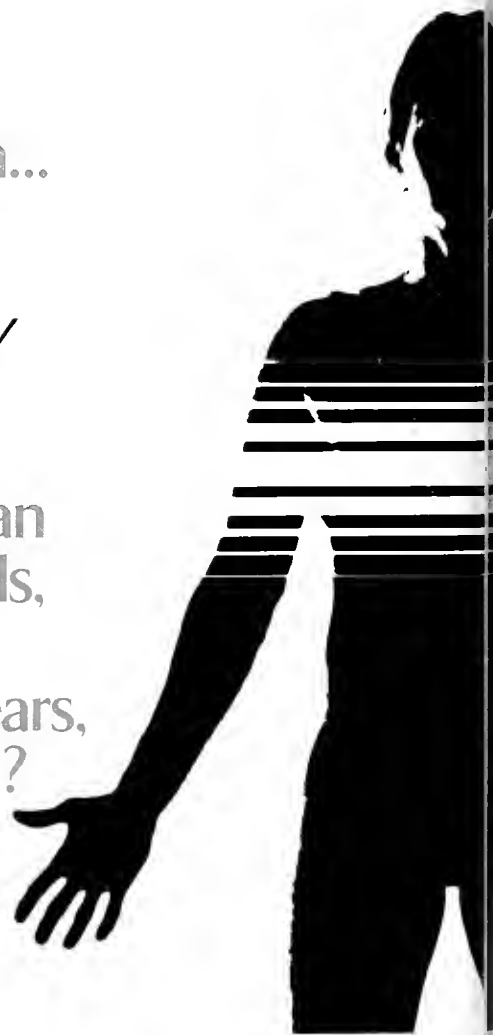
An article written by Dr. Richard S. Marx, assistant professor of medicine, appears in the January issue of the *American Journal of Diseases of Children*. The article is "Serological Evidence of Previous Rocky Mountain Spotted Fever in Sixth Graders."

In addition, Marx has been appointed principal investigator of an "Open Study of Mezlocillin in the Treatment of Patients with Serious Infection." The

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\$5,000 grant was provided by Miles Laboratories. Dr. Peter B. Campbell, associate professor of medicine, is co-investigator with Marx on the study.

"Construction and Enzymatic Selection of Bacteriophage G-4 Genomes with Modified J-F Intercistron Regions" is the topic of a poster presentation made by Dr. Uwe R. Müller, assistant professor of microbiology, at the Annual Congress on Recombinant DNA Research. The conference was held in Los Angeles February 14-17.

Dr. David R. Garriss, assistant professor of anatomy, recently was a seminar leader at the Department of Reproductive Biology, Obstetrics and Gynecology at Case Western Reserve University School of Medicine. The topic of the seminar was "Uterine Blood

Flow and the Regulation of Intrauterine Growth of the Guinea Pig Fetal-Placental Unit."

Garriss also has published several articles. "Body Weight Related Changes in Ovarian Blood Flow in the Pseudopregnant Rat" appears in the January issue of *IRCS Medical Science* and is co-authored by Dr. Irvin E. Lawrence, professor of anatomy. "Depopulation of the Ventromedial Hypothalamic Nucleus in the Diabetic Chinese Hamster" appears in the February *ACTA Neuropathologica* and is co-authored by Dr. Arthur R. Diani, assistant professor of anatomy, and Carol Smith, research technician. "Effects of Uterine Blood Flow in the Rat and Guinea Pig: Correlation with Serum Progesterone Levels" appears in the February *IRCS Medical Science*.

Dr. Zubie W. Metcalf, director of the Center for Student Opportunities, has been appointed to the

And there's more proof on the way!

1982 will see the completion of the Multiple Risk Factor Intervention Trial (MRFIT)—a six-year, 12,000-patient study assessing the factors that increase risk of cardiovascular disease. For the management of hypertension, the preferred Step-2 regimen in this study is reserpine-thiazide.

In 1978, in a preliminary report presented to the Epidemiology Section of the American Heart Association (Dallas, Nov 1978), after 12 months of the trial, fewer patients (5.3%) treated with reserpine suffered depression than even the untreated control group (7.7%)!

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Health Careers Opportunity Program Peer Review Committee of the Health Resources Administration, Department of Health and Human Services. The committee reviews grant applications for programs designed to recruit disadvantaged students to health professions programs.

Three School of Medicine physicians have collaborated on a paper which appears in the January issue of the *American Journal of Obstetrics and Gynecology*. "Persistent Hemoglobin-S in Donor Blood May Give Falsely Elevated Acid-Elution Tests in a Rh-negative Patient" was co-authored by Drs. E. M. Stropnick and Jarlath M. MacKenna, from the department of obstetrics and gynecology, and Ernest W. Larkin, from pathology and laboratory medicine.

In addition, MacKenna has received \$22,050 from the National Foundation-March of Dimes to continue funding for a perinatal social worker.

Dr. Yash P. Kataria, associate professor of medicine, is a contributing author on an article appearing in the December issue of *Leprosy Review*. The article is titled "Kveim Test in Leprosy: A Clinical and Histopathological Evaluation."

Kataria collaborated with Department of Medicine

faculty members Drs. Robert A. Shaw, assistant professor, and Peter B. Campbell, associate professor, on "Sarcoidosis: An Overview II." The article appears in the spring issue of *Clinical Notes on Respiratory Diseases* and is published by the American Thoracic Society-Medical Section of the American Lung Association.

Dr. Robert A. Shaw, assistant professor of medicine, co-authored an article which appears in the December 1981 issue of *Chest*. The article is titled "A Perplexing Case of Hilar Adenopathy."

Dr. Theodore Kushnick, professor of pediatrics and director of the Developmental Evaluation Clinic, co-authored an article titled "Genetic Counseling in Prenatally Diagnosed Trisomy 18 and 21: Psychosocial Aspects." The article appears in the January 1982 issue of *Pediatrics*.

Duke University Medical Center

Duke University Medical Center's first chief of urology died at home Feb. 1 after a myocardial infarction. Dr. Edwin P. Alyea, 83, retired from Duke as a

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without thiazides. Such potassium formulations should be used with Salutensin only when indicated and should be discontinued immediately if abdominal pain, distention, nausea, vomiting or gastrointestinal bleeding occurs. Use cautiously, and only when deemed essential, in fertile, pregnant or lactating patients.

Use in Pregnancy

Thiazides cross the placenta and can cause fetal or neonatal hyperbilirubinemia, thrombocytopenia, altered carbohydrate metabolism and possibly electrolyte disturbances. Fatal reactions may occur with reserpine during electroshock therapy; discontinue Salutensin 2 weeks before such therapy. Increased respiratory secretions, nasal congestion, cyanosis and anorexia may occur in infants born to reserpine-treated mothers.

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(especially with hepatic cirrhosis and corticosteroid therapy) may occur, particularly with pre-existing vomiting and diarrhea. Potassium loss may cause digitalis intoxication. *Potassium loss responds to potassium-rich foods, potassium chloride or, if necessary, discontinuation of therapy.* Serum ammonia elevation may precipitate coma in precomatose hepatic cirrhotics. Discontinue therapy 2 weeks before surgery or if myocardial irritability, progressive azotemia or severe depression occur. Exercise caution in patients with chronic uremia, angina pectoris, coronary thrombosis or extensive cerebral vascular disease or bronchial asthma and in those with a history of peptic ulceration or bronchial asthma; in post-sympathectomy patients; in patients on quinidine; and in patients with gallstones, in whom biliary colic may occur. Patients who have diabetes mellitus or who are suspected of being prediabetic should be kept under close observation if treated with this agent.

professor emeritus in 1969. He was chief of the division of urology for 33 years.

Alyea graduated from Princeton in 1919 and from Johns Hopkins School of Medicine in 1923. He trained at Hopkins until he accepted an appointment as the first chief of urology at Duke in 1929. He was named professor of urology in 1942.

One of the early innovators of prostatic surgery, he helped develop the transurethral resection. He was among the early investigators of sulfonamides in treatment of urinary tract infections and the cystoscopic multiple catheter method or ureteral stone extraction.

While Alyea was chief of the urology division, 35 residents completed urology training at Duke. In 1964, those residents honored him by establishing the Edwin P. Alyea Visiting Professorship in Urology. In 1974, Duke's urologic clinic was renamed to honor Alyea.

A Duke University Medical Center gynecologist says there's an increase of women seeking to have their sterility operations reversed.

"Unequivocally, we're seeing more candidates for sterilization than we did five years ago," said Dr. Arthur F. Haney, associate professor of obstetrics and gynecology. "I think now more women are be-

coming aware that reversal is a possibility, and they have a fairly good chance of being successful."

"The high divorce rate in this country appears to be the major contributing factor to the increasing number of women seeking reversals," he said.

"The majority of women come to me for a reversal because they've remarried and want to have a child by their second husband," he said. "Many factors have worked together to give us a large population of young sterilized women, including controversy over the side effects of the pill and the IUD. Surgical sterilization has thus become a frequent alternative for large numbers of young women."

The gynecologist, who has performed about 150 sterilization reversal operations, said Duke surgeons have experienced "about a 50% success rate overall." "Some categories of women who've been sterilized have a much higher chance of success at reversal, and some much lower," he said, "depending on the type of procedure they originally had and the length of fallopian tube remaining."

A fund has been established at Duke to honor Dr. Roy T. Parker, a distinguished obstetrician and gynecologist at the medical center.

Parker relinquished the chairmanship of Duke's Department of Obstetrics and Gynecology in Sep-

ADVERSE REACTIONS

Hydroflumethiazide

Skin-rashes (including exfoliative dermatitis), skin photosensitivity, urticaria, necrotizing angitis, xanthopsia, granulocytopenia, aplastic anemia, orthostatic hypotension (potentiated with alcohol, barbiturates or narcotics), allergic glomerulonephritis, acute pancreatitis, liver involvement (intrahepatic cholestatic jaundice), purpura plus or minus thrombocytopenia, hyperuricemia, hyperglycemia, glycosuria, malaise, weakness, dizziness, fatigue, paresthesias, muscle cramps, skin rash, epigastric distress, vomiting, diarrhea and constipation.

Reserpine

Depression, peptic ulceration, diarrhea, Parkinsonism, nasal stuffiness, dryness of the mouth, weight gain, impotence or decreased libido, conjunctival injection, dull sensorium, deafness, glaucoma, uveitis, optic atrophy, and, with overdosage, agitation, insomnia and nightmares.

USUAL DOSE

1 tablet b.i.d.

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References:

1. Propranolol in the treatment of essential hypertension. Veterans Administration Cooperative Study Group on Antihypertensive Agents. *JAMA* 237:2303-2310, 1977.
2. Five-year findings of the hypertension detection and follow-up program: I. Reduction in mortality of persons with high blood pressure, including mild hypertension. Hypertension Detection and Follow-up Program Cooperative Group. *JAMA* 242:2562-2571, 1979.
3. The 1980 Report of the Joint National Committee on Detection, Evaluation, and Treatment of High Blood Pressure. *Arch Intern Med* 140:1280-1285, 1980.

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tember, 1980 after 16 years service. He continues as an active professor in the department.

"This fund honors a man who has excelled as a teacher, physician and administrator," said Dr. Charles B. Hammond, present department chairman. "The fund will be used to augment education and research efforts in obstetrics and gynecology."

A native of eastern North Carolina, Parker served his residency at Duke from 1946 to 1947. He also completed fellowships in pathology and endocrinology. He was appointed assistant professor at Duke in 1955 and rose through the ranks to full professor in 1963. He was appointed chairman of the department in 1964. In 1970 he became the first recipient of the F. Bayard Carter Distinguished Professorship, which he still retains.

Hammond said starter money for the Parker Fund has already been received from many of Parker's friends, former trainees and Duke faculty members. Eventually the fund will support a full professorship in Parker's honor.

An assistant professor of cardiology at Duke, Dr. Edward Pritchett, has been appointed director of the medical center's Clinical Research Unit (CRU)

housed on Rankin Ward. The research facility, funded by the National Institutes of Health Division of Research Resources, is the second largest in the country.

"It's an outstanding facility for Duke as a place to do research and improve the quality of patient care," Pritchett said. "Research in the CRU has an immediate impact on how medicine is practiced in the future."

The research unit was the first of eight general clinical research centers established by the federal government in 1961. Many now commonplace medical procedures were first tested in Rankin. It was on Rankin that the first tissue typing for kidney transplants took place, and there also that Duke neurosurgeon Dr. Blaine Nashold implanted the first bladder stimulator in a paraplegic in 1970. The early work on Wolff-Parkinson-White Syndrome — in which surgeon Will Sealy and cardiologists Andrew Wallace and subsequently, John Gallagher collaborated — also was done on Rankin patients.

Pritchett received his medical degree from Ohio State University and came to Duke as a cardiology fellow in 1974. He was appointed to the Duke staff in 1977. He succeeds Dr. Samuel Wells, who left last fall to become Bixby Professor and Chairman of Surgery at Washington University-Barnes Hospital.

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ACTIVE MEDICAL STAFF — December, 1981

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William D. Keck, M.D.
Morgan E. Scott, M.D.
Don L. Weston, M.D.
Davis G. Garrett, M.D.
D. Wilfred Abse, M.D.
Hal G. Gillespie, M.D.
Basil E. Roebuck, M.D.
Orren LeRoyce Royal, M.D.



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CONTRAINDICATIONS: Convulsive disorders or known history of sensitivity to any of the listed active ingredients. Because of the vasodilating action of nicotinic acid, Ru-Vert should not be used in patients with hypertension.

WARNINGS: The safety of this preparation during pregnancy and lactation has not been established. Use of this drug requires that the physician evaluate the potential benefits of the drug against any possible hazards to the mother and child.

PRECAUTIONS: Although there are no absolute contraindications to pentylenetetrazol, it should be used with caution in epileptic patients or those known to have a low convulsive threshold or a focal brain lesion. Caution should be exercised when treating patients with high doses of Ru-Vert who have heart disease. While pentylenetetrazol does not act directly on the myocardium, the results from central vagal stimulation could cause bradycardia.

Pheniramine maleate, like other antihistamines, may produce sedative side effects in certain patients.

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ADVERSE REACTIONS: Pentylenetetrazol in high doses may produce toxic symptoms typical of central nervous system stimulants, which act on the higher motor centers and the spinal cord. Convulsions resulting from this drug are spontaneous and are not induced by external stimuli. They usually last for several minutes and are followed by profound depression and respiratory paralysis. Death has been reported from the injection of 1.0 grams of pentylenetetrazol.

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Duke neurologist Dr. Barrie J. Hurwitz and psychologist Dr. Richard Surwit talked about "Headaches — Causes and Relief" at a Health Night Out lecture Feb. 2 at the medical center. About 250 people attended the lecture, the sixteenth in a series of free programs sponsored by the medical center's public relations office.

Headaches are very common, according to neurologist Hurwitz, and create discomfort and disability to the patient but don't often involve serious disease. Hurwitz said that probably less than 10% of headaches indicate serious illness such as tumors or the onset of a stroke.

Surwit discussed another common headache, the muscle contraction headache or tension headaches, and a different approach to treatment.

"A reliable, relatively quick, economic way to correct the severe muscle contraction headaches is through biofeedback and relaxation therapy," Surwit said. After demonstrating how biofeedback works, Surwit pointed out there is a definite relationship between stress of tension and the frequency and intensity of contraction headaches.

A noted sociologist from Duke University's Center for the study of aging, Dr. Erdman Palmore, has received an award for a paper on retirement.

Palmore, who has been studying what he calls "successful aging" since his affiliation with Duke University in 1967, was selected to receive the 1982 Scholarly Paper Award of the Association for Gerontology in Higher Education. Palmore's paper is, "Preparation for Retirement: the Impact of Pre-retirement Programs on Retirement and Leisure."

He received a citation at the association's presidential banquet Feb. 12. Palmore presented the paper at an educational meeting of the association Feb. 13. His paper will also be published in a book, *Life After Work*, edited by Nancy J. Osgood.

Palmore is professor of medical sociology in the medical center's Department of Psychiatry. He is author or co-author of more than 60 articles and seven books on aging. Palmore is best known in his field for developing the innovative Duke Longitudinal Studies, in which individuals were interviewed regularly from the age of 60 until their deaths. He is currently researching mental illness among the very old and the antecedents and consequences of retirement.

Jacob J. Blum, James B. Duke professor of physiology, received a \$19,717 research grant from the National Institute of Child Health and Human Development to study "Control Metabolism in Tetrahymena."

Benjamin Mark in the Department of Medicine was awarded a 1981 Merritt-Putnam Clinical Research Fellowship from the Epilepsy Foundation of America. The fellowship, supported by funds from Parke-Davis, is for \$18,000.

D. Bernard Amos, professor of immunology and experimental surgery, received a \$229,611 research grant from the National Institute of Allergy and Infectious Disease to further his study of human HLA and mouse H-2 antigens.

Nell B. Cant, assistant professor in the Department of Anatomy, received a research grant of \$9,661 from the Deafness Research Foundation. Cant's project is "Organization of the Cochlear Input to the Small Cells in the Ventral Cochlear Nucleus."

Nels C. Anderson Jr., associate professor in the Department of Physiology, received a \$37,212 grant from the National Institute of Arthritis, Diabetes, Digestive and Kidney Diseases. Anderson's research project is "Biophysical Analysis of Single Smooth Muscle Cells."

Dr. Ara Y. Tourian, associate professor in the division of neurology, received a \$78,262 grant from the National Institute of Neurological and Communication Disorders and Stroke. The title of his project is "Huntington's Chorea: Studies of Protein Glycosylation."

Robert E. Webster, professor of biochemistry, received a \$65,544 research grant from the National Institute of General Medical Sciences to study "Biosynthesis of a Membrane Protein."

James A. Blumenthal, assistant professor in the division of medical psychology, received a \$30,904 new investigator research award from the National Heart, Lung and Blood Institute. Blumenthal is studying "Behavioral Components of the Type A Behavior Pattern."

Paul M. Conn, assistant professor in the Department of Pharmacology, received a research grant of \$45,425 from the National Institute of Aging. Conn is studying regulation of the gonadotrope during aging.

James N. Davis, professor of neurology and associate professor of pharmacology, received a specialized research center award of \$363,712 from the National Institute of Neurological and Communicative Disorders and Stroke for the Duke-VA Center for Cerebrovascular Research.

Dennis B. Amos, professor of immunology and experimental surgery received a \$141,688 research grant from the National Cancer Institute to study "Cellular Immunity and Regulatory Factors in Cancer."

John C. Cambier, assistant professor of immunology, received a development award of \$36,480 from the National Institute of Allergy and Infectious Diseases to study the molecular biology of B cell tolerance.

Hillel S. Koren, associate medical research professor in the division of immunology, received a \$77,004 research grant from the National Cancer Institute. Koren is studying "Human Natural Killing: Regulation and Recognition."

David C. Deubner, assistant professor of community and family medicine, received a \$172,393 research grant from the National Cancer Institute to study "Breast Cancer Biology: Epidemiology and Prognosis."

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James J. Hines in the Department of Medicine received a national research service award of \$18,468 from the National Heart, Lung and Blood Institute to study coronary heart disease.

**Bowman Gray
School of Medicine
Wake Forest University**

A two-day international symposium on the immunology of reproduction is expected to attract participants from more than 20 countries when it opens June 24 at the Bowman Gray School of Medicine.

The immunology of reproduction is the highly specialized portion of a much larger field dealing with the body's ability to defend itself from outside threats such as viruses and bacteria and inside threats such as cancer.

Because a fetus does not have the same type of tissue as its mother, the mother's immune system might reasonably be expected to recognize the fetus as foreign material and to attack the fetus. But in most instances, that does not happen.

It is not understood why the fetus' immune system does not recognize and react to the mother's tissue or why the maternal immune system does not attack the fetus.

To have an understanding of why the fetus is pro-

tected in most cases but not in all cases could help in treating diseases of pregnancy and in treating such problems as cancer.

The June meeting is attracting almost all of the world's experts on the immunology, including Dr. Angus Gidley-Baird of Australia, who works with a little-known substance called early pregnancy factor. The factor is released by a fertilized egg about two hours after conception, and has been found to be a powerful suppressor of the immune system.

A research team at the Bowman Gray School of Medicine soon will have ready for routine use a portable system for detecting problems of the brain's blood circulation.

The new system will be useful in evaluating patients who have had problems ranging from stroke to mild loss of memory.

The system is an outgrowth of and an improvement on technology which has been in use in the medical school's regional cerebral blood flow laboratory. That laboratory was one of the first in the nation for the study of blood circulation in the brain.

Previously, patients had to be brought to the laboratory where they would inhale a small amount of radioactive Xenon gas. When brain tissue became saturated with the gas, 16 monitors around the head

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measured the radioactivity being given off from the brain. Analysis of that information permitted doctors to know where brain tissue was damaged or destroyed.

The old system, though, was stationary while many patients were too sick to be brought to it.

Following two years of work, the new system is ready to be taken to such places as the emergency room or operating room while giving useful information more rapidly. The system uses 24 radiation detectors, and its computerization permits a doctor to have information from a test within minutes instead of the two hours required previously.

Doctors at the Bowman Gray/Baptist Hospital Medical Center are using a new diagnostic technique to help assure that while looking for one type of problem in an infant's head, physicians do not create other problems for the infant.

The technique involves using ultrasound to search for bleeding in the brain of premature babies. The ultrasound provides black and white images of the brain's tissue, thus offering a clearer view of ventricles and adjacent tissue than was possible with CT scanning.

And the new technique does not involve moving the infant from the intensive care nursery. Such babies are particularly sensitive to changes in their environment. They also are not exposed to x-rays during the new procedure. The technique uses the soft spot on top of the head as a window into the brain.

Research at the Bowman Gray School of Medicine has shown that some of the dietary goals recommended in 1977 by the McGovern Committee of the Senate may have had more to do with politics than with nutrition.

Dr. Richard W. St. Clair, professor of pathology at Bowman Gray, found that two of the three major recommendations aimed at lowering cholesterol in the bloodstreams of Americans produced no significant benefits.

The three recommendations were to reduce dietary cholesterol by half, change the proportion of saturated and unsaturated fats in the diet, and lower overall fat consumption from an average of about 40% of calories to 30% of calories.

Bowman Gray research found that reducing overall fat consumption from 40% to 30% had no effect on the cholesterol in the blood of research monkeys. The

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recommended change in the ratio of saturated to unsaturated had only a marginal effect.

Reducing the amount of cholesterol in the monkeys' diets did produce an important decrease in the blood cholesterol.

The conclusion from St. Clair's work was that someone could reduce plasma cholesterol levels by reducing the amount of cholesterol in the diet without having to follow all three of the McGovern recommendations. That is based upon the idea that people react to a dietary cholesterol reduction in a manner similar to the way monkeys react.

A new fat substitute made by a firm which also makes shortening may help people lower their cholesterol levels.

Dr. Richard St. Clair has been working with a substance called sucrose polyester. Monkeys given the fat substitute experienced a 16% drop in their intestinal absorption of cholesterol.

Sucrose polyester is made by Procter and Gamble. St. Clair has said that there is no drug which acts by inhibiting the absorption of cholesterol.

While cholesterol is absorbed into the blood

through the intestines, sucrose polyester remains an oil in which some cholesterol becomes trapped for later excretion.

Margaret Ann Hofler, a registered nurse on the Bowman Gray faculty, is the co-author of a new book on how to teach patients.

Ms. Hofler, assistant director of nursing education for the Northwest Area Health Education Center at Bowman Gray, and Lynne Knapp, supervisor of health education for the Durham County Health Department, wrote the *Patient Education Handbook*. The 187-page book is published in Bowie, Md.

The work is written primarily for health professionals and for students. It offers suggestions for assessing patients and their health needs, formulating learning objectives, selecting teaching strategies and evaluating learning.

North Carolina Baptist Hospital, Bowman Gray's principal teaching hospital, has received a three-year certificate of approval from the Commission on Cancer of the American College of Surgeons.

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The approval is in recognition of the hospital's comprehensive cancer treatment program and its tumor registry, which keeps records on cancer patients and stays abreast of what is happening to patients even after they have left the hospital.

A nurse at the Bowman Gray School of Medicine is one of 13 people elected to the North Carolina Board of Nursing.

Mrs. Joyce Gainey, a research associate in the Section on Gynecologic Oncology, will serve a three-year term on the board.

Dr. Lloyd H. Harrison, associate professor of urology, has been appointed by the Southeastern Section of the American Urological Association as the representative of the Allied Health Professionals Committee to the American Urological Association.

Dr. Robert I. Kohut, professor of surgery (otolaryngology), has been appointed chairman of the Committee for Research in Otolaryngology for the American Academy of Otolaryngology — Head and Neck Surgery for 1982-83.

Dr. Ralph B. Leonard, assistant professor of surgery (emergency medicine), has been appointed to the editorial board of PEER III of the American College of Emergency Medicine. This board prepares exams distributed nationally to assess the knowledge of emergency physicians.

Dr. Robert B. Taylor, associate professor of family medicine, has been appointed to the publications committee of the World Organization of National Colleges, Academies and Academic Associations of General Practitioners/Family Physicians.

PLATO [427?-347 B.C.]

In sleep, when the rest of the soul, the rational, gentle and dominant part, slumbers, . . . the beastly and savage part, replete with food and wine, gambols and, repelling sleep, endeavors to sally forth and satisfy its own instincts. . . . there is nothing it will not venture to undertake as being released from all sense of shame and all reason. It does not shrink from attempting to lie with a mother in fancy or with anyone else, man, god, or brute. It is ready for any foul deed of blood. . . . there exists in every one of us, even in some reputed most respectable, a terrible, fierce and lawless brood of desires, which it seems are revealed in our sleep.

Republic, IX. 571 (tr. by P. Shorey)

In Memoriam

WILLIAM LARKIN NORVILLE

Dr. William Larkin Norville was born in Rutherford, N.C., on October 6, 1910. He was educated at Maryville College, Maryville, Tennessee, and the University of Tennessee School of Medicine, graduating in 1936. He interned at the South Carolina Baptist Hospital, Columbia, S.C., and went into the general practice of medicine in Whitmire, S.C., for thirteen years. From 1950 to 1952 he was Health Director of the Rutherford-Polk District Health Department.

In 1952 he was named director of the Alamance County Health Department. While maintaining his directorship, he attended the University of North Carolina School of Public Health and earned a Master of Public Health Degree in 1955. He retired as Alamance County Health Director on December 31, 1975.

Dr. Norville was a member of the Alamance County Medical Society, the Medical Society of North Carolina, the American Medical Association, the N.C. Public Health Association, and the First Presbyterian Church of Burlington. He was married to Lillie Mar Freeman Norville, who survives, and they have three married daughters and seven grandchildren.

Dr. Norville expired from cardio-vascular disease on January 12, 1982, after a long illness.

ALAMANCE COUNTY MEDICAL SOCIETY

BERNARD LESLIE RICHARDS, M.D.

Bernard Leslie Richards, born in Stittsville, Mich., May 2, 1917, died at the North Carolina Baptist Hospital September 11, 1981.

After graduating from high school in 1938 he worked on the family farm in Michigan and then served in the Army in World War II. Following this he took an x-ray technician course and worked in a mission hospital in Trinidad from 1949 to 1952. On returning to the United States, he received his B.A. degree from Columbia Union College and his M.D. degree from Loma Linda University in 1958. His internship was in Portland, Oreg., and he then moved to Mocksville, N.C., in 1959 where he lived until his death. He was a member of the Forsyth-Stokes-Davie County Medical Society, and the American Academy of Family Physicians.

During his 22 years in Mocksville, he had an active general practice; operated a large beef cattle farm; was elected County Coroner, and later was appointed Medical Examiner. He was a member of the Board of Trustees of Davie County Hospital and was an active member of the Mocksville Seventh-Day Adventist Church.

He leaves a wife, Aletha Shook Richards; a daughter,

Patty Richards, a nurse in Chattanooga, Tenn.; one sister and three brothers. He will long be remembered as a concerned and sympathetic physician, a devout church leader, a devoted husband and father, and a friend, who always had time to stop a few minutes and talk. His life touched many people and he will be missed by all of them.

FORSYTH-STOKES-DAVIE
MEDICAL SOCIETY

DAVID GROVER JAEHNING, M.D.

Dr. David Grover Jaehning, a member of the Forsyth-Stokes-Davie County Medical Society, died unexpectedly on December 26, 1981. David Jaehning was born in Twin Valley, Minn., to Herman and Emma Jaehning. He received his M.D. from the Bowman Gray School of Medicine in 1948 and served in the Navy during World War II and the Air Force during the Korean Conflict. He was in family practice in Wahpeton, N.D., for 27 years, moving in 1979 to Clemmons, N.C., where he established the Family Practice Clinic. During the short period of practice in Clemmons, he became widely known for his dedication to patient care.

He is survived by his wife, the former Mattie Williard; a daughter, Candice Jaehning of Denver, Colo., two sons, Mark J. Jaehning of Denver and Gregg Jaehning of Wahpeton; and three grandchildren.

FORSYTH-STOKES-DAVIE
MEDICAL SOCIETY

OLIN CHARLES PERRYMAN, JR.

Olin Charles Perryman, Jr., was born August 11, 1917, in Winston-Salem, N.C. He was the only son of Olin Charles Perryman and Mary Zimmerman Perryman and lived his entire life in Winston-Salem except for the years spent receiving his medical education and serving his country during World War II.

After graduating from the R. J. Reynolds High School, he earned his Bachelor of Arts degree from the University of North Carolina. Four years later he was graduated from the Duke University School of Medicine in Durham with the degree of Doctor of Medicine. His internship and residency programs were served at the N.C. Baptist Hospital of the Bowman Gray School of Medicine in Winston-Salem.

Dr. Perryman began his private practice of medicine in Winston-Salem, but his practice was interrupted when he entered the service of his country in the Army

Medical Corps from 1942 until 1946 with overseas duty as Captain.

Dr. Perryman was interested in family practice, and in September 1972 he was chosen a charter member of the American Academy of Family Practice. He was a member of the Medical Park Hospital Staff, the medical-dental staff of the Forsyth Memorial Hospital where he once headed the family practice division of medicine, the Forsyth-Stokes-Davie County Medical Society, the North Carolina Medical Society, and the American Medical Association.

He received his early religious training at the Home Moravian Church and was a life-long Moravian. In 1953 he transferred his membership to Konnoak Hills Moravian Church, where he was active in many phases of church life. He sang in the choir, played the trumpet in the church band, and, at the time of his death, he was serving as chairman of the Board of

Trustees. He was a charter member of the Konnoak Lions Club in which he played a leading role.

In June 1946 he was married to Ellen Brannock of Mount Airy and was the father of two daughters, Mrs. Sharon Dowdy of Raleigh, N.C., and Mrs. Marsha Fowler of Nashville, Tenn. He is also survived by a grand-daughter, Robyn Frederick, and two sisters, Mrs. P. A. Perryman of Winston-Salem, and Mrs. C. L. White of Thomasville, N.C.

Dr. Perryman died at his home October 20, 1981, following several months of illness. He was dedicated to the practice of family medicine which he performed with a high degree of efficiency and skill for 35 years. His private patients, those living in his community, and those closely associated with him in his profession will remember him as a quiet, unassuming, sincere man who lived a life of devoted service to others.

BENJAMIN F. MARTIN, M.D.

HIPPOCRATES [460?-377? B.C.]

Whoever is to acquire a competent knowledge of medicine, ought to be possessed of the following advantages: a natural disposition; instruction; a favorable position for the study; early tuition; love of labour; leisure. First of all, a natural talent is required; for, when Nature opposes, everything else is vain; but when Nature leads the way to what is most excellent, instruction in the art takes place, which the student must try to appropriate to himself by reflection, becoming an early pupil in a place well adapted for instruction. He must also bring to the task a love of labour and perseverance, so that the instruction taking root may bring forth proper and abundant fruits.

The Law, II (tr. by Francis Adams)



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tion and vascular surgery. Academic and scholarly productivity required for promotion. Keen interest in attracting outstanding woman and/or minority physician. Applicants should submit complete curriculum vitae to: Dr. George Johnson, Jr., Department of Surgery, 210 Clinical Sciences Building 229H, University of North Carolina, Chapel Hill, North Carolina 27514. **THE UNIVERSITY OF NORTH CAROLINA IS AN EQUAL OPPORTUNITY/AFFIRMATIVE ACTION EMPLOYER.**

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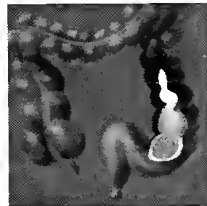
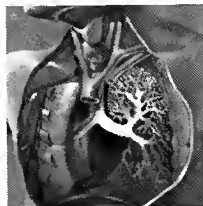
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(trimethoprim and sulfamethoxazole)

succeeds

Bactrim is useful for the following infections when due to susceptible strains of indicated organisms (see indications section in summary of product information):

Expanding its usefulness in antimicrobial therapy



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a continuing record of high clinical effectiveness against common uropathogens

in acute otitis media in children...
effective against both major otic pathogens...with *b.i.d.* convenience

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in shigellosis...
faster relief of diarrhea than with ampicillin²

multiforme, Stevens-Johnson syndrome, generalized skin eruptions, epidermal necrolysis, urticaria, serum sickness, pruritus, exfoliative dermatitis, anaphylactoid reactions, periorbital edema, conjunctival and scleral injection, photosensitization, arthralgia and allergic myocarditis. Gastrointestinal reactions: Glossitis, stomatitis, nausea, emesis, abdominal pains, hepatitis, diarrhea and pancreatitis. **CNS reactions:** Headache, peripheral neuritis, mental depression, convulsions, ataxia, hallucinations, tinnitus, vertigo, insomnia, apathy, fatigue, muscle weakness and nervousness. **Miscellaneous reactions:** Drug fever, chills, toxic nephrosis with oliguria and anuria, periarthritis nodosa and L.E. phenomenon. Due to certain chemical similarities to some goitrogens, diuretics (acetazolamide, thiazides) and oral hypoglycemic agents, sulfonamides have caused rare instances of goiter production, diuresis and hypoglycemia in patients; cross-sensitivity with these agents may exist. In rats, long-term therapy with sulfonamides has produced thyroid malignancies.

Doseage: Not recommended for infants less than two months of age. URINARY TRACT INFECTIONS AND SHIGELLOSIS IN ADULTS AND CHILDREN, AND ACUTE OTITIS MEDIA IN CHILDREN:

Adults: Usual adult dosage for urinary tract infections—1 DS tablet (double strength), 2 tablets (single strength) or 4 teasp. (20 ml) *b.i.d.* for 10-14 days. Use identical daily dosage for 5 days for shigellosis.

Children: Recommended dosage for children with urinary tract infections or acute otitis media—8 mg/kg trimethoprim and 40 mg/kg sulfamethoxazole per 24 hours, in two divided doses for 10 days. Use identical daily dosage for 5 days for shigellosis.

For patients with renal impairment: Use recommended dosage regimen when creatinine clearance is above 30 ml/min. If creatinine clearance is between 15 and 30 ml/min, use one-half the usual regimen. Bactrim is not recommended if creatinine clearance is below 15 ml/min.

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Usual adult dosage: 1 DS tablet (double strength), 2 tablets (single strength) or 4 teasp. (20 ml) *b.i.d.* for 14 days.

PNEUMOCYSTIS CARINII PNEUMONITIS:

Recommended dosage: 20 mg/kg trimethoprim and 100 mg/kg sulfamethoxazole per 24 hours in equal doses every 6 hours for 14 days. See complete product information for suggested children's dosage table.

Supplied: Double Strength (DS) tablets, each containing 160 mg trimethoprim and 800 mg sulfamethoxazole, bottles of 100; Tel-E-Dose[®] packages of 100; Prescription Paks of 20 and 28. Tablets, each containing 80 mg trimethoprim and 400 mg sulfamethoxazole—bottles of 100 and 500; Tel-E-Dose[®] packages of 100; Prescription Paks of 40. Pediatric Suspension, containing 40 mg trimethoprim and 200 mg sulfamethoxazole per teaspoonful (5 ml); cherry-flavored—bottles of 100 ml and 16 oz (1 pint). Suspension, containing 40 mg trimethoprim and 200 mg sulfamethoxazole per teaspoonful (5 ml); fruit-licorice flavored—bottles of 16 oz (1 pint).



ROCHE LABORATORIES
Division of Hoffmann-La Roche Inc.
Nutley, New Jersey 07110

Before prescribing, please consult complete product information, a summary of which follows:

Indications and Usage: For the treatment of urinary tract infections due to susceptible strains of the following organisms: *Escherichia coli*, *Klebsiella-Enterobacter*, *Proteus mirabilis*, *Proteus vulgaris*, *Proteus morganii*. It is recommended that initial episodes of uncomplicated urinary tract infections be treated with a single effective antibacterial agent rather than the combination. Note: The increasing frequency of resistant organisms limits the usefulness of all antibacterials, especially in these urinary tract infections.

For acute otitis media in children due to susceptible strains of *Haemophilus influenzae* or *Streptococcus pneumoniae* when in physician's judgment it offers an advantage over other antimicrobials. Limited clinical information presently available on effectiveness of treatment of otitis media with Bactrim when infection is due to ampicillin-resistant *Haemophilus influenzae*. To date, there are limited data on the safety of repeated use of Bactrim in children under two years of age. Bactrim is not indicated for prophylactic or prolonged administration in otitis media at any age.

For acute exacerbations of chronic bronchitis in adults due to susceptible strains of *Haemophilus influenzae* or *Streptococcus pneumoniae* when in physician's judgment it offers an advantage over a single antimicrobial agent.

For enteritis due to susceptible strains of *Shigella flexneri* and *Shigella sonnei* when antibacterial therapy is indicated.

Also for the treatment of documented *Pneumocystis carinii* pneumonitis. To date, this drug has been tested only in patients 9 months to 16 years of age who were immunosuppressed by cancer therapy.

Contraindications: Hypersensitivity to trimethoprim or sulfonamides; patients with documented megaloblastic anemia due to folate deficiency; pregnancy at term; nursing mothers because sulfonamides are excreted in human milk and may cause kernicterus; infants less than 2 months of age.

Warnings: BACTRIM SHOULD NOT BE USED TO TREAT STREPTOCOCCAL PHARYNGITIS. Clinical studies show that patients with group A β -hemolytic streptococcal tonsillopharyngitis have higher incidence of bacteriologic failure when treated with Bactrim than do those treated with penicillin. Deaths from hypersensitivity reactions, agranulocytosis, aplastic anemia and other blood dyscrasias have been associated with sulfonamides. Experience with trimethoprim is much more limited but occasional interference with hematopoiesis has been reported as well as an increased incidence of thrombopenia with purpura in elderly patients on certain diuretics, primarily thiazides. Sore throat, fever, pallor, purpura or jaundice may be early signs of serious blood disorders. Frequent CBC's are recommended; therapy should be discontinued if a significantly reduced count of any formed blood element is noted.

Precautions: General: Use cautiously in patients with impaired renal or hepatic function, possible folate deficiency, severe allergy or bronchial asthma. In patients with glucose-6-phosphate dehydrogenase deficiency, hemolysis, frequently dose-related, may occur. During therapy, maintain adequate fluid intake and perform frequent urinalyses, with careful microscopic examination, and renal function tests, particularly where there is impaired renal function. Bactrim may prolong prothrombin time in those receiving warfarin; reassess coagulation time when administering Bactrim to these patients.

Pregnancy: Teratogenic Effects: Pregnancy Category C. Because trimethoprim and sulfamethoxazole may interfere with folate metabolism, use during pregnancy only if potential benefits justify the potential risk to the fetus.

Adverse Reactions: All major reactions to sulfonamides and trimethoprim are included, even if not reported with Bactrim. Blood dyscrasias: Agranulocytosis, aplastic anemia, megaloblastic anemia, thrombopenia, leukopenia, hemolytic anemia, purpura, hypoprothrombinemia and methemoglobinemia. Allergic reactions: Erythema

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in recurrent urinary tract infections*

from site to source

Bactrim continues to demonstrate high clinical effectiveness in recurrent urinary tract infections. Bactrim reaches effective levels in urine, serum, and renal tissue¹...the trimethoprim component diffuses into vaginal secretions in bactericidal concentrations¹... and in the fecal flora, Bactrim effectively suppresses Enterobacteriaceae² with little resulting emergence of resistant organisms.

1. Rubin RH, Swartz MN. *N Engl J Med* 303:426-432, Aug 21, 1980. 2. Data on file, Medical Department, Hoffmann-La Roche Inc.

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160 mg trimethoprim and 800 mg sulfamethoxazole

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maximizes results with B.I.D. convenience



in strains of indicated organisms

Please see previous page for summary of product information.

North Carolina

MEDICAL JOURNAL

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1982 Sports Medicine Symposium:
July 2-4, Wrightsville Beach

1982 Committee Conclave: Sept. 29-
Oct. 3, Southern Pines

1983 Annual Meeting: May 5-8,
Pinehurst

Candidates for nutritional therapy..

10,000,000 alcoholics. Ethanol may produce many effects that together bring about nutritional deficiencies, so that alcoholism affects nutrition at many levels.¹

25,500,000 geriatric patients. The older patient may have some disorder or socioeconomic problem that can undermine good nutrition.²

23,500,000 surgical patients. Nutritional status can be compromised by the trauma of surgery; and some operations interfere with the ingestion, digestion and absorption of food.³



Before prescribing, please consult complete product information, a summary of which follows:

Each Berocca® Plus tablet contains 5000 IU vitamin A (as vitamin A acetate), 30 IU vitamin E (as *dl*-alpha tocopheryl acetate), 500 mg vitamin C (ascorbic acid), 20 mg vitamin B₁ (as thiamine mononitrate), 20 mg vitamin B₂ (riboflavin), 100 mg niacin (as niacinamide), 25 mg vitamin B₆ (as pyridoxine HCl), 0.15 mg biotin, 25 mg pantothenic acid (as calcium pantothenate), 0.8 mg folic acid, 50 mcg vitamin B₁₂ (cyanocobalamin), 27 mg iron (as ferrous fumarate), 0.1 mg chromium (as chromium nitrate), 50 mg magnesium (as magnesium oxide), 5 mg manganese (as manganese dioxide), 3 mg copper (as cupric oxide), 22.5 mg zinc (as zinc oxide).

Indications: Prophylactic or therapeutic nutritional supplementation in physiologically stressful conditions, including conditions causing depletion, or reduced absorption or bioavailability of essential vitamins and minerals; certain conditions resulting from severe B-vitamin or ascorbic acid deficiency; or conditions resulting in increased needs for essential vitamins and minerals.

Contraindications: Hypersensitivity to any component.

Warnings: Not for pernicious anemia or other megaloblastic anemias where vitamin B₁₂ is deficient. Neurologic involvement may develop or progress, despite temporary remission of anemia, in patients with vitamin B₁₂ deficiency who receive supplemental folic acid and who are inade-

quately treated with B₁₂.

Precautions: *General:* Certain conditions may require additional nutritional supplementation. During pregnancy, supplementation with vitamin D and calcium may be required. Not intended for treatment of severe specific deficiencies. *Information for the Patient:* Toxic reactions have been reported with injudicious use of certain vitamins and minerals. Urge patients to follow specific dosage instructions. Keep out of reach of children. *Drug and Treatment Interactions:* As little as 5 mg pyridoxine daily can decrease the efficacy of levodopa in the treatment of parkinsonism. Not recommended for patients undergoing such therapy.

Adverse Reactions: Adverse reactions have been reported with specific vitamins and

5000,000 hospital patients with directions.⁴ Many are anorectic and may have a markedly reduced food intake. Supplements are often provided as a prudent measure because the vitamin status of critically ill patients cannot be readily determined.³

The incalculable millions on calorie-reduced diets. Patients ingesting 1000 or fewer calories per day could be at high risk because this intake may not supply most nutrients in adequate amounts without supplementation.⁵

Berocca Plus

A balanced formula for prophylactic or therapeutic nutritional supplementation.

Berocca Plus Tablets provide: therapeutic levels of ascorbic acid and B-complex vitamins; supplemental levels of biotin, vitamins A and E, and five important minerals (iron, chromium, manganese, copper and zinc); plus magnesium. Berocca Plus is not intended for the treatment of specific vitamin and/or mineral deficiencies.

Berocca Plus,

highly acceptable to

patients, has virtually no odor or aftertaste and is economical. And its "Rx only" status means more physician involvement, better patient compliance.

References: 1. Shaw S, Lieber CS: Nutrition and alcoholism, chap. 40, in *Modern Nutrition in Health and Disease*, edited by Goodhart RS, Shils ME. Philadelphia, Lea & Febiger, 1980, pp. 1220, 1237. 2. Watkin DM: Nutrition for the aging and the aged, chap. 28, in *Modern Nutrition in Health and Disease*, op. cit., p. 781. 3. Shils ME, Randall HT: Diet and nutrition in the care of the surgical patient, chap. 36, in *Modern Nutrition in Health and Disease*, op. cit., pp. 1084, 1089, 1114. 4. Dixon RE: *Ann Intern Med* 89 (Part 2): 749-753, Nov 1978. 5. Committee on Dietary Allowances, National Research Council: Recommended Dietary Allowances, ed 9. Washington, National Academy of Sciences, 1980, p. 13.

minerals, but generally at levels substantially higher than those in Berocca Plus. However, allergic and idiosyncratic reactions are possible at lower levels. Iron, at the usual recommended levels, has been associated with gastrointestinal intolerance in some patients.
Dose and Administration: Usual adult dose: one tablet daily. Not recommended for children. Available on prescription only.
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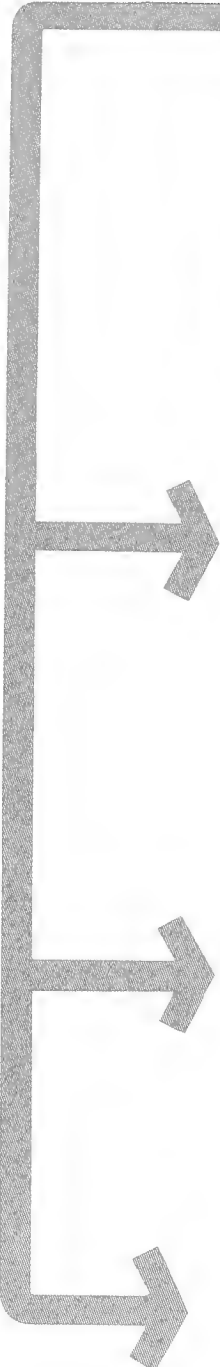
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PLAN AHEAD



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SYMPOSIUM
July 2-4, 1982
Blockade Runner
Wrightsville Beach, N.C.

COMMITTEE CONCLAVE
September 29-October 3, 1982
Mid Pines Club
Southern Pines, N.C.

ANNUAL MEETING
May 5-8, 1983
Pinehurst Hotel
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June 1982, Vol. 43, No. 6

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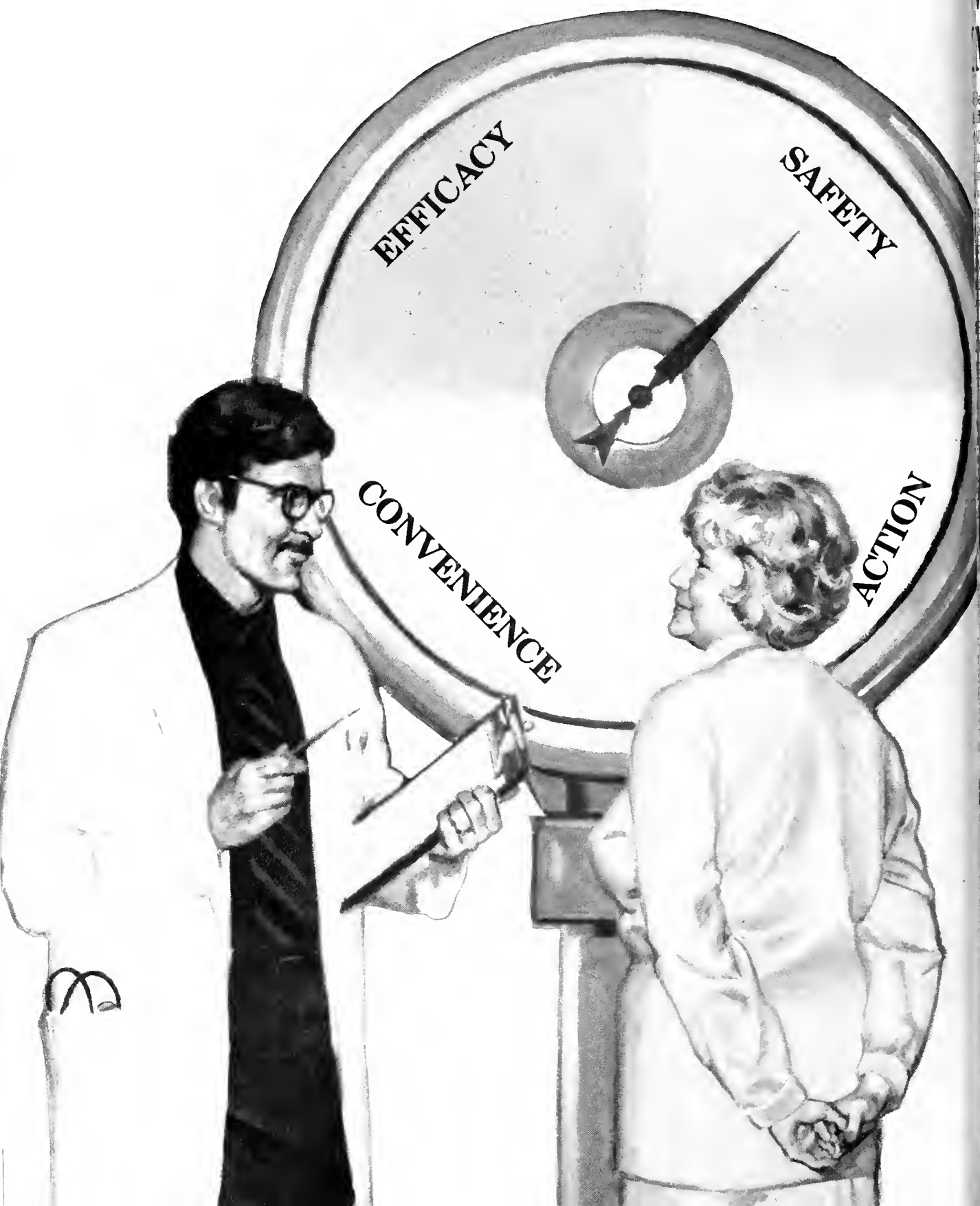
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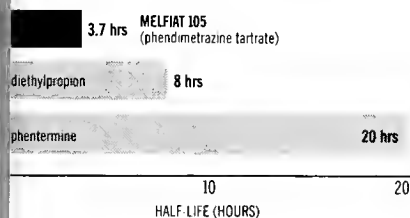


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Because MELFIAT 105 effectively controls appetite. MELFIAT 105 (phendimetrazine tartrate), an effective anorexiant, provides the appetite control over-eighth patients often need to begin a successful program of weight reduction. And the positive results of initial short-term therapy with MELFIAT 105 can help motivate them to a lifelong commitment of weight control.

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For more information please write to Reid-Provident Laboratories, Inc. 640 Tenth Street, N.W. Atlanta, Georgia 30318

References: 1. Sheu YS, Ferguson JA, Cooper JR: *Evaluation of the Abuse Liability of Diethylpropion, Phendimetrazine, and Phentermine*, unclassified document ADAMHA, HHS, Office of Medical and Professional Affairs, NIDA, 1980. 2. Douglas JG, Munro JF: The role of drugs in the treatment of obesity, *Drugs* 21:362-373, 1981.

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INDICATIONS AND USAGE: Melfiat® 105 (phendimetrazine tartrate) is indicated in the management of exogenous obesity as a short-term adjunct (a few weeks) in a regimen of weight reduction based on caloric restriction. The limited usefulness of agents of this class (See CLINICAL PHARMACOLOGY) should be measured against possible risk factors inherent in their use such as those described below.

CONTRAINDICATIONS: Advanced arteriosclerosis, symptomatic cardiovascular disease, moderate to severe hypertension, hyperthyroidism, known hypersensitivity, or idiosyncrasy to the sympathomimetic amines, glaucoma. Agitated states. Patients with a history of drug abuse. During or within 14 days following the administration of monoamine oxidase inhibitors (hypertensive crises may result).

WARNINGS: Tolerance to the anorectic effect usually develops within a few weeks. When this occurs, the recommended dose should be discontinued. Phendimetrazine tartrate may impair the ability of the patient to engage in potentially hazardous activities such as operating machinery or driving a motor vehicle; the patient should therefore be cautioned accordingly.

Drug Dependence: Phendimetrazine tartrate is related chemically and pharmacologically to the amphetamines. Amphetamines and related stimulant drugs have been extensively abused, and the possibility of abuse of phendimetrazine tartrate should be kept in mind when evaluating the desirability of including a drug as part of a weight-reduction program.

Abuse of amphetamines and related drugs may be associated with intense psychological dependence and severe social dysfunction. There are reports of patients who have increased the dosage to many times that recommended. Abrupt cessation following prolonged high-dosage administration results in extreme fatigue and mental depression; changes are also noted on the sleep EEG, manifestations of chronic intoxication with anorectic drugs include severe dermatoses, marked insomnia, irritability, hyperactivity, and personality changes. The most severe manifestation of chronic intoxication is psychosis, often clinically indistinguishable from schizophrenia.

USAGE IN PREGNANCY: The safety of phendimetrazine tartrate in pregnancy and lactation has not been established. Therefore, phendimetrazine tartrate should not be taken by women who are or may become pregnant.

USAGE IN CHILDREN: Phendimetrazine tartrate is not recommended for use in children under 12 years of age.

PRECAUTION: Caution is to be exercised in prescribing phendimetrazine tartrate for patients with even mild hypertension. Insulin requirements in diabetes mellitus may be altered in association with the use of phendimetrazine tartrate and the concomitant dietary regimen. Phendimetrazine tartrate may decrease the hypotensive effect of guanethidine. The least amount feasible should be prescribed or dispensed at one time in order to minimize the possibility of overdose.

ADVERSE REACTIONS: Cardiovascular: Palpitation, tachycardia, elevation of blood pressure.

Central Nervous System: Overstimulation, restlessness, dizziness, insomnia, euphoria, dysphoria, tremor, headache; rarely psychotic episodes at recommended doses.

Gastrointestinal: Dryness of the mouth, unpleasant taste, diarrhea, constipation, other gastrointestinal disturbances.

Allergic: Urticaria.

Endocrine: Impotence, changes in libido.

OVERDOSAGE: Manifestations of acute overdose with phendimetrazine tartrate include restlessness, tremor, hyperreflexia, rapid respiration, confusion, assaultiveness, hallucinations, panic states.

Fatigue and depression usually follow the central stimulation. Cardiovascular effects include arrhythmias, hypertension or hypotension and circulatory collapse. Gastrointestinal symptoms include nausea, vomiting, diarrhea, and abdominal cramps. Fatal poisoning usually terminates in convulsions and coma. Management of acute phendimetrazine tartrate intoxication is largely symptomatic and includes lavage and sedation with a barbiturate. Experience with hemodialysis or peritoneal dialysis is inadequate to permit recommendation in this regard. Acidification of the urine increases phendimetrazine tartrate excretion. Intravenous phenolamine (Regitine) has been suggested for possible acute, severe hypertension, if this complicates phendimetrazine tartrate overdose.

DOSAGE AND ADMINISTRATION: Since Melfiat® 105 (phendimetrazine tartrate) 105 mg is a sustained-release dosage form, limit to one sustained-release capsule in the morning. Melfiat® 105 (phendimetrazine tartrate) is not recommended for use in children under 12 years of age.

HOW SUPPLIED: Each orange and clear sustained-release capsule contains 105 mg phendimetrazine tartrate in bottles of 100.

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An added complication... in the treatment of bacterial bronchitis*



Brief Summary.

Consult the package literature for prescribing information.

Indications and Usage: Cefclor* (cefclor, Lilly) is indicated in the treatment of the following infections when caused by susceptible strains of the designated microorganisms:

Lower respiratory infections, including pneumonia caused by *Streptococcus pneumoniae* (*Diplococcus pneumoniae*), *Haemophilus influenzae*, and *S. pyogenes* (group A beta-hemolytic streptococci).

Appropriate culture and susceptibility studies should be performed to determine susceptibility of the causative organism to Cefclor.

Contraindication: Cefclor is contraindicated in patients with known allergy to the cephalosporin group of antibiotics.

Warnings: IN PENICILLIN-SENSITIVE PATIENTS, CEPHALOSPORIN ANTIBIOTICS SHOULD BE ADMINISTERED CAUTIOUSLY. THERE IS CLINICAL AND LABORATORY EVIDENCE OF PARTIAL CROSS-ALLERGENICITY OF THE PENICILLINS AND THE CEPHALOSPORINS, AND THERE ARE INSTANCES IN WHICH PATIENTS HAVE HAD REACTIONS, INCLUDING ANAPHYLAXIS, TO BOTH DRUG CLASSES.

Antibiotics, including Cefclor, should be administered cautiously to any patient who has demonstrated some form of allergy, particularly to drugs.

Precautions: If an allergic reaction to cefclor occurs, the drug should be discontinued, and, if necessary, the patient should be treated with appropriate agents, e.g., pressor amines, antihistamines, or corticosteroids.

Prolonged use of cefclor may result in the overgrowth of nonsusceptible organisms. Careful observation of the patient is essential. If superinfection occurs during therapy, appropriate measures should be taken.

Positive direct Coombs tests have been reported during treatment with the cephalosporin antibiotics. In hematologic studies or in transfusion cross-matching procedures when antiglobulin tests are performed on the minor side or in Coombs testing of newborns whose mothers have received cephalosporin antibiotics before parturition, it should be recognized that a positive Coombs test may be due to the drug.

Cefclor should be administered with caution in the presence of markedly impaired renal function. Under such a condition, careful clinical observation and laboratory studies should be made because safe dosage may be lower than that usually recommended.

As a result of administration of Cefclor, a false-positive reaction for glucose in the urine may occur. This has been observed with Benedict's and Fehling's solutions and also with Clinistix[®] tablets but not with Tes-Tape[®] (Glucose Enzymatic Test Strip, USP, Lilly).

Usage in Pregnancy: Although no teratogenic or antifertility effects were seen in reproduction studies in mice and rats receiving up to 12 times the maximum human dose or in ferrets given three times the maximum human dose, the safety of this drug for use in human pregnancy has not been established. The benefits of the drug in pregnant women should be weighed against a possible risk to the fetus.

Usage in Infancy: Safety of this product for use in infants less than one month of age has not been established.

Adverse Reactions: Adverse effects considered related to cefclor therapy are uncommon and are listed below.

Gastrointestinal symptoms occur in about 2.5 percent of patients and include diarrhea (1 in 70) and nausea and vomiting (1 in 90).

As with other broad-spectrum antibiotics, colitis, including rare instances of pseudomembranous colitis, has been reported in conjunction with therapy with Cefclor.

Hypersensitivity reactions have been reported in about 1.5

Some ampicillin-resistant strains of *Haemophilus influenzae*—a recognized complication of bacterial bronchitis*—are sensitive to treatment with Cefclor.¹⁻⁵

In clinical trials, patients with bacterial bronchitis due to susceptible strains of *Streptococcus pneumoniae*, *H. influenzae*, *S. pyogenes* (group A beta-hemolytic streptococci), or multiple organisms achieved a satisfactory clinical response with Cefclor.⁷

Cefclor[®]

cefclor

Pulvules[®], 250 and 500 mg

percent of patients and include morbilliform eruptions (1 in 100). Pruritus, urticaria, and positive Coombs tests each occur in less than 1 in 200 patients. Cases of serum-sickness-like reactions (erythema multiforme or the above skin manifestations accompanied by arthritis/arthritis, frequently, fever) have been reported. These reactions are apparently due to hypersensitivity and have usually occurred during or following a second course of therapy with Cefclor* (cefclor). Such reactions have been reported more frequently in children than in adults. Signs and symptoms usually occur a few days after initiation of therapy and subside within a few days after cessation of therapy. No serious sequelae have been reported. Antihistamines and corticosteroids appear to enhance resolution of the syndrome.

Cases of anaphylaxis have been reported, half of which have occurred in patients with a history of penicillin allergy.

Other effects considered related to therapy included eosinophilia (1 in 50 patients) and genital pruritus or vaginitis (less than 1 in 100 patients).

Causal Relationship Uncertain—Transitory abnormalities in clinical laboratory test results have been reported. Although they were of uncertain etiology, they are listed below to serve as alerting information for the physician.

Hepatic—Slight elevations in SGOT, SGPT, or alkaline phosphatase values (1 in 40).

Hematopoietic—Transient fluctuations in leukocyte count, predominantly lymphocytosis occurring in infants and young children (1 in 40).

Renal—Slight elevations in BUN or serum creatinine (less than 1 in 500) or abnormal urinalysis (less than 1 in 200) (100281R).

*Many authorities attribute acute infectious exacerbation of chronic bronchitis to either *S. pneumoniae* or *H. influenzae*.

Note: Cefclor is contraindicated in patients with known allergy to the cephalosporins and should be given cautiously to penicillin-allergic patients.

Penicillin is the usual drug of choice in the treatment and prevention of streptococcal infections, including the prophylaxis of rheumatic fever. See prescribing information.

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Additional information available to the profession on request from Eli Lilly and Company, Indianapolis, Indiana 46285.

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Others to look for:

agitation
anorexia
feelings of guilt
and worthlessness
fatigue
palpitations
headache
vague aches
and pains
sadness
psychic and
somatic anxiety

Artist's conception
looking out from the human eye
as conceived in a schematic model



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in moderate depression and anxiety

Limbitrol® IV

Tablets 5-12.5 each containing 5 mg chlordiazepoxide and 12.5 mg amitriptyline
(as the hydrochloride salt)

Tablets 10-25 each containing 10 mg chlordiazepoxide and 25 mg amitriptyline
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Specific therapy with h.s. dosage convenience

Please see summary of complete product information on following page.

LIMBITROL® TABLETS Tranquilizer—Antidepressant

Before prescribing, please consult complete product information, a summary of which follows:

Indications: Relief of moderate to severe depression associated with moderate to severe anxiety

Contraindications: Known hypersensitivity to benzodiazepines or tricyclic antidepressants. Do not use with monoamine oxidase (MAO) inhibitors or within 14 days following discontinuation of MAO inhibitors since hyperpyretic crises, severe convulsions and deaths have occurred with concomitant use, then initiate cautiously gradually increasing dosage until optimal response is achieved. Contraindicated during acute recovery phase following myocardial infarction

Warnings: Use with great care in patients with history of urinary retention or angle-closure glaucoma. Severe constipation may occur in patients taking tricyclic antidepressants and anticholinergic-type drugs. Closely supervise cardiovascular patients. (Arrhythmias, sinus tachycardia and prolongation of conduction time reported with use of tricyclic antidepressants, especially high doses. Myocardial infarction and stroke reported with use of this class of drugs.) Caution patients about possible combined effects with alcohol and other CNS depressants and against hazardous occupations requiring complete mental alertness (e.g., operating machinery, driving)

Usage in Pregnancy: Use of minor tranquilizers during the first trimester should almost always be avoided because of increased risk of congenital malformations as suggested in several studies. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.

Since physical and psychological dependence to chlordiazepoxide have been reported rarely, use caution in administering Limbitrol to addiction-prone individuals or those who might increase dosage, withdrawal symptoms following discontinuation of either component alone have been reported (nausea, headache and malaise for amitriptyline, symptoms [including convulsions] similar to those of barbiturate withdrawal for chlordiazepoxide)

Precautions: Use with caution in patients with a history of seizures, in hyperthyroid patients or those on thyroid medication, and in patients with impaired renal or hepatic function. Because of the possibility of suicide in depressed patients, do not permit easy access to large quantities in these patients. Periodic liver function tests and blood counts are recommended during prolonged treatment. Amitriptyline component may block action of guanethidine or similar antihypertensives. Concomitant use with other psychotropic drugs has not been evaluated. Sedative effects may be additive. Discontinue several days before surgery. Limit concomitant administration of ECT to essential treatment. See Warnings for precautions about pregnancy. Limbitrol should not be taken during the nursing period. Not recommended in children under 12. In the elderly and debilitated, limit to smallest effective dosage to preclude ataxia, oversedation, confusion or anticholinergic effects.

Adverse Reactions: Most frequently reported are those associated with either component alone: drowsiness, dry mouth, constipation, blurred vision, dizziness and bloating. Less frequently occurring reactions include vivid dreams, impotence, tremor, confusion and nasal congestion. Many depressive symptoms including anorexia, fatigue, weakness, restlessness and lethargy have been reported as side effects of both Limbitrol and amitriptyline. Granulocytopenia, jaundice and hepatic dysfunction have been observed rarely.

The following list includes adverse reactions not reported with Limbitrol but requiring consideration because they have been reported with one or both components or closely related drugs.

Cardiovascular: Hypotension, hypertension, tachycardia, palpitations, myocardial infarction, arrhythmias, heart block, stroke

Psychiatric: Euphoria, apprehension, poor concentration, delusions, hallucinations, hypomania and increased or decreased libido

Neurologic: Incoordination, ataxia, numbness, tingling and paresthesias of the extremities, extrapyramidal symptoms, syncope, changes in EEG patterns

Anticholinergic: Disturbance of accommodation, paralytic ileus, urinary retention, dilatation of urinary tract

Allergic: Skin rash, urticaria, photosensitization, edema of face and tongue, pruritus

Hematologic: Bone marrow depression including agranulocytosis, eosinophilia, purpura, thrombocytopenia

Gastrointestinal: Nausea, epigastric distress, vomiting, anorexia, stomatitis, peculiar taste, diarrhea, black tongue

Endocrine: Testicular swelling and gynecomastia in the male, breast enlargement, galactorrhea and minor menstrual irregularities in the female and elevation and lowering of blood sugar levels

Other: Headache, weight gain or loss, increased perspiration, urinary frequency, mydriasis, jaundice, alopecia, parotid swelling

Overdosage: Immediately hospitalize patient suspected of having taken an overdose. Treatment is symptomatic and supportive. IV administration of 1 to 3 mg physostigmine salicylate has been reported to reverse the symptoms of amitriptyline poisoning. See complete product information for manifestation and treatment.

Dosage: Individualize according to symptom severity and patient response. Reduce to smallest effective dosage when satisfactory response is obtained. Larger portion of daily dose may be taken at bedtime. Single *h.s.* dose may suffice for some patients. Lower dosages are recommended for the elderly. Limbitrol 10-25, initial dosage of three to four tablets daily in divided doses, increased to six tablets or decreased to two tablets daily as required. Limbitrol 5-12.5, initial dosage of three to four tablets daily in divided doses, for patients who do not tolerate higher doses.

How Supplied: White, film-coated tablets, each containing 10 mg chlordiazepoxide and 25 mg amitriptyline (as the hydrochloride salt) and blue, film-coated tablets, each containing 5 mg chlordiazepoxide and 12.5 mg amitriptyline (as the hydrochloride salt)—bottles of 100 and 500, Tel-E-Dose® packages of 100, available in trays of 4 reverse-numbered boxes of 25, and in boxes containing 10 strips of 10, Prescription Paks of 50.

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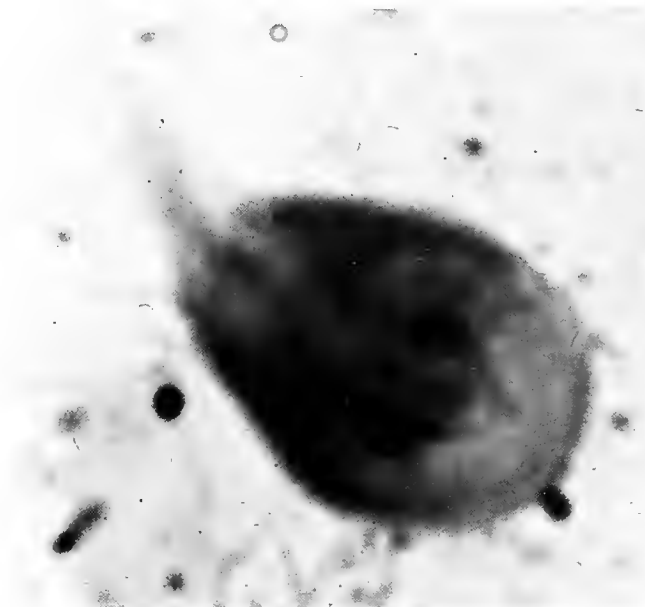
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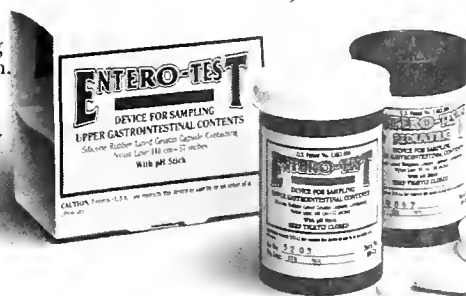
Giardia lamblia

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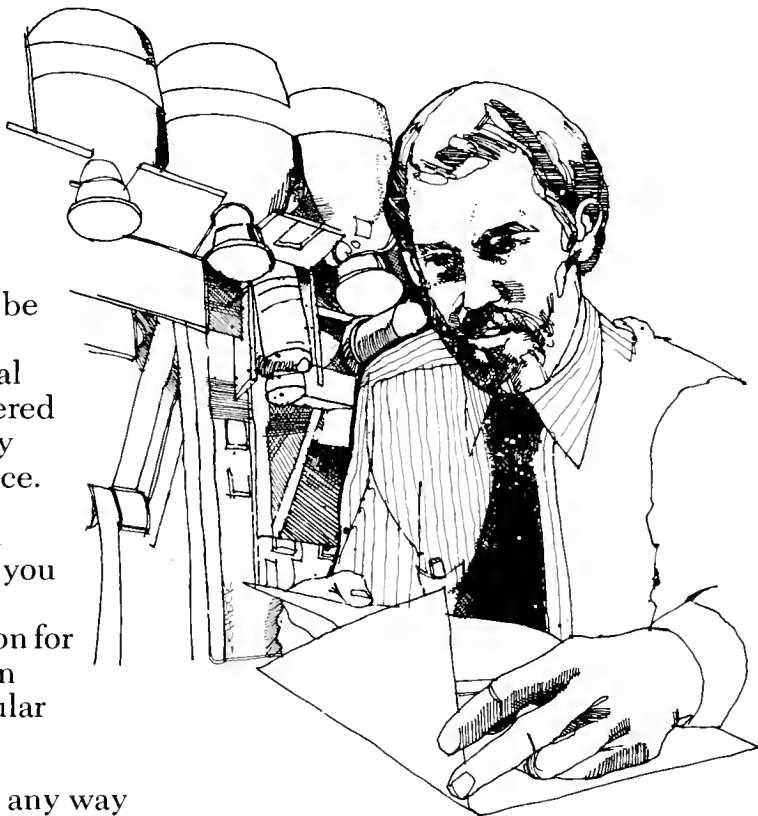
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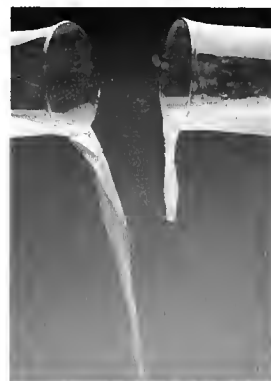
Among the general study population who expressed a preference, 59.6% (31/52)† preferred BranLax overall, effectiveness of BranLax was favored by 57.6% (19/33),† taste was preferred by 58.8% (30/51)† and convenience of preparing BranLax was favored by 62.5% (20/32).†

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*Kitt, D.P. and Meisner, P.: How to manage constipation with a high-fiber diet, *Geriatrics* 34:33-40, Feb. 1979.
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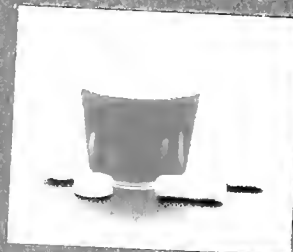
analgesic, decongestant, antihistamine, cough suppressant

Comprehensive relief for the complex cold

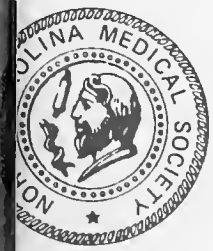
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PRESIDENT'S NEWSLETTER

NORTH CAROLINA MEDICAL SOCIETY

NO. 1

JUNE 1982

The College of Surgeons North Carolina Chapter had a grand meeting down at Myrtle Beach this month, and I want to thank them for their warm hospitality and fellowship. This was the first of many specialty meetings which I hope to attend this year. I hope that each specialty society will feel the need to work closely with the North Carolina Medical Society in our joint and mutual concerns and efforts in the participation of the health care of our patients. I want to visit as many of the specialty groups as possible and encourage them to join our concept of unity, membership, and solidarity for the upcoming year.

I hope this year to visit each one of them much like Dr. Newell has done so well this past year in visiting and bringing the message of the Medical Society to the county medical societies.

It looks like it is going to be an exciting year, and I have great hopes and enthusiasm for the numerous projects that we have underway. Dr. Newell's feet may not be very large, but the footsteps I am trying to follow are mighty big, and I am only beginning to appreciate how very big the job I have been given is.

SB-411, an Act to Re-define the Practice of Chiropractic, will be considered by the North Carolina House of Representatives in the next few weeks. Please watch your mail for requests for help from the Committee on Legislation. If the Committee asks you to contact your legislators, it will be imperative that you act immediately. It is important to the health care of all citizens of our state that this radical legislation be defeated.

Each month I will be including a brief paragraph on our living Past Presidents. I think it is very important for us to look at where we have come from and acknowledge those who have done so much for us in the past. And I am very pleased to begin this with the only other President, to the best of my knowledge, who came from the Northeast North Carolina area, Dr. Zack Owens.

I learned a lot from looking at our Past Presidents and what they have done; and while I am very excited about the future, I am also very proud of the past.

Of the principle activities during Dr. Owen's year as President was the promotion of the Salk polio vaccine campaign. The May 1955 Annual Meeting, which concluded Dr. Owen's term, voted to admit blacks to Society membership. The theme of his Presidential Address was "The Human Side of Medicine"---in which he commented, "We as physicians have a sacred trust in each other and to the profession to give the best possible medical care. Exorbitant fees, unnecessary surgery, and unnecessary

medical care reflect on the honor and integrity of our profession." He concluded with the comments: "Let us therefore dedicate ourselves to the service of humanity and emulate the Great Physician by doing good for others so that our treasures may be stored in the hearts and minds of men. Let us serve as a lighthouse in our community, guiding the mariner and voyager on the sea of trouble and frustration to a safe and happy landing."

I hope to see many of you at the July 2-4, 1982, meeting of the Sports Medicine Symposium sponsored by the Society's Committee on Medical Aspects of Sports, Blockade Runner in Wrightsville Beach.

Sincerely,

M. S. Redding M.D.
Marshall S. Redding, M.D.
President

The 1982 Annual Meeting

LOTTE OBSERVER Sunday, May 9, 1982 3D

Factor: Limb Attachment Success Rising

More Than 600 Such Operations at Duke University Since 1967

By ROBERT CONN
Observer Medical Editor

PINEHURST — Doctors are reporting greater success in reattaching lost limbs, a Duke University surgeon says.

Since 1967, doctors at Duke have reattached lost parts on 600 patients, Dr. James Nunley II, assistant professor of orthopedics, told the N.C. Medical Society last

week. The artificial device is planted in the windpipe with a hole in the back and has a one-way valve

required a highly motivated patient who has good eye-hand coordination. To maintain the device, a patient "has got to be able to work backward looking in a mirror."

The first multicenter study had shown a long-term success rate of 71% with the device. "That's now gone to 50%," he said.

The artificial device is planted in the windpipe with a hole in the back and has a one-way valve

of those, 39 have been successful with an 85% success rate. Restoration of function, in good, is rarely possible in the most successful cases.

Talking about the problems in standard treatment, one of the hallmarks of the annual meeting of the N.C. Medical Society, held Thursday at Pinehurst.

Unlike national societies, where the emphasis is on what's new, the emphasis here is on what's old. Speakers often speak of what doesn't work as well as what does.

Some examples:

- Dr. Fred McGuire, professor of surgery at the University of North Carolina at Chapel Hill, said a new artificial larynx (voice box) he had had their larynx (voice box) removed "probably has been over-sold."

- Despite years of using whole-body extracts to immunize people against bee stings, the technique has recently been shown to be ineffective, and Dr. J.S. Atwater Jr. of Asheville told allergists that vaccine prepared from the venom should be used instead to desensitize patients.

- Some cases of delayed sexual development can be detected early by merely paying more attention to growth curves, Dr. Louis Underwood, professor of pediatrics at UNC Medical School, told pediatricians.

- Dr. Lyndon Jordan of Smithfield told family physicians, "You've got to use a little horse sense" in treating allergic patients. "Kids who are allergic to grass can't cut grass," he said. The most important thing the doctor can do is to take a careful history. Often, simple treatment such as antihistamines will be effective. "We don't go straight for immunotherapy anymore," he said, because many patients simply become sensitized.

Doctors Want Drunk-Driving Crackdown

PINEHURST — Doctors across North Carolina are calling on the N.C. General Assembly to "take whatever measures are necessary to remove the drunken drivers from our highways."

Seven resolutions from the Mecklenburg County Medical Society, including two from the House of Delegates meeting at the N.C. Medical Society, were introduced Thursday at the N.C. Medical Society.

In addition, Rowan County introduced a resolution calling for a law that would require a physician to report a patient who is a drunk driver. The resolution was introduced by Dr. J.S. Atwater Jr. of Asheville. It also calls for a law that would require a physician to report a patient who is a drunk driver.



32A

The News and Observer, Raleigh, N.C., Sun., May 9, 1982

North Carolina Medical Society elects president

PINEHURST (UPI) — Dr. Marshall S. Redding, an Elizabeth City ophthalmologist, was elected president of the North Carolina Medical Society Saturday during an annual meeting at Pinehurst.



Redding

Redding, a Greensboro native, will assume leadership of the 6,122-member medical society. The society resolved late Saturday that the Legislature should require medical training for anyone who practices medicine. It also called for a law that would require a physician to report a patient who is a drunk driver.



The 1982 Annual Meeting

The Charlotte Observer
Sunday, May 9, 1982
379-6450

379-6459 8 a.m.-Midnight

Doctors: Test
For Alcoholics
In DUI Cases

By ROBERT CONN
Observer Medical Editor
The N.C.

Cases

By ROBERT CONN
Observer Medical Editor

PINEHURST — The N.C. Medical Society voted to ask the N.C. General Assembly Saturday to require medical evaluation for alcoholism of all people convicted of driving under the influence of alcohol (DUI). The Medical Society asked that those found to have alcoholism be required to get "appropriate treatment."

The House of Delegates of the state is expected to take action on the society's request.

...the General Assembly to
...are necessary to remove
...from our highways and protect
...the highways and protect
...the highways and protect

...the presence of the
...does not relieve a DUI offender
...for actions while under the

not give specific punitive action drivers, but noted that other proposed mandatory sentencing provisions "accurately reflect the state's view of the seriousness of drinking beer and wine, possession of a unique group of liquor, and alcohol-related traffic offenses, special legislative action may be warranted."

the House also called for getting drunk drivers off the road.

The House of Delegates asked the state law requiring computerized licensing of domestic cats. Such laws exist only in Charlotte, Chapel Hill, Forsyth, Craven and

...outbreaks in wild
...and South Carolina
...and that the ra-
...Carolina is twice

the recognition and control of animal medical social control programs in the community.

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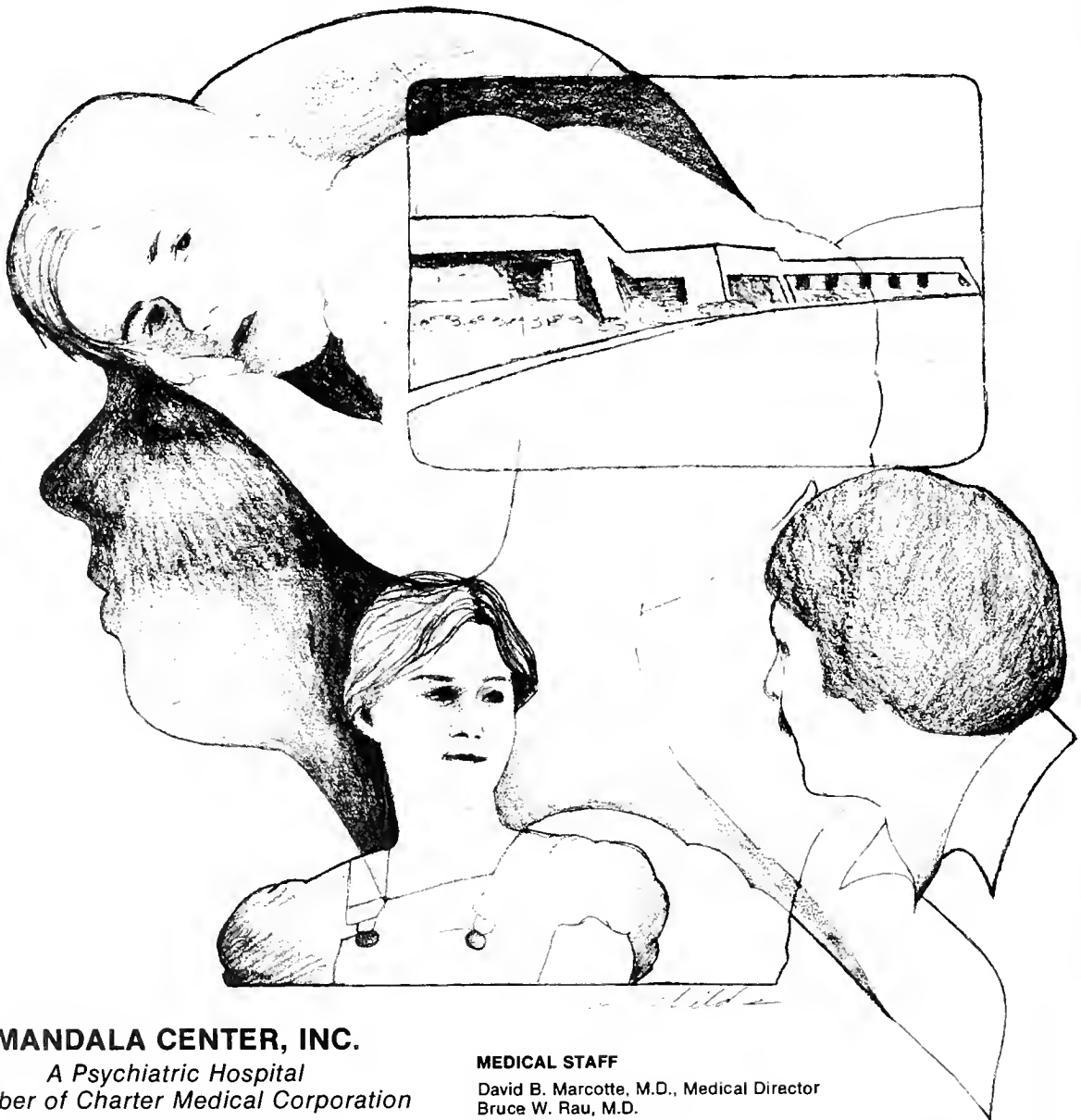
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Computed Tomographic Diagnosis of the Obstructed Duplex Kidney in Adults

Stephen H. Ladwig, M.D., Robert A. Older, M.D.,
William L. Foster, M.D., and Melvyn Korobkin, M.D.

ABSTRACT The hydronephrotic duplex kidney in the pediatric population is a frequent urologic abnormality. The obstructed duplex kidney in the adult population is less frequently encountered. Its presentation can be unusual and pose a diagnostic problem. Computed tomography of the abdomen can provide significant information which may not be obtainable by excretory urography or ultrasonography. The use of computerized tomography for diagnosis of massive hydronephrosis of a duplicated system in an adult¹ has been described. Three cases of this entity seen at the Duke University Medical Center are reported here, including the initial patient.

CASE REPORTS

Case 1

AN 85-year-old white female presented with a one year history of frequency and nocturia. Physical examination was unremarkable. Urinalysis demonstrated microscopic pyuria and hematuria with bacteriuria. Urine culture grew greater than 100,000 colonies per milliliter of *E. coli*.

Excretory urography revealed a hypovascular 6-7 cm left upper pole renal mass with lateral displacement of the kidney and ureter (Figure 1A). The possibility of a duplication of the left renal collecting system with obstruction was raised, but cystoscopy demonstrated only a small ureteral orifice on the left. Computed tomography revealed a low density mass in the upper pole of the left kidney. The mass tapered into an elongated tube medial and anterior to the left ureter, which was felt to represent a dilated ureter and collecting structures in a duplicated system (Figures 1B, 1C).

Surgery confirmed duplication of

the left renal collecting system with obstruction of the left upper pole. A left hemi-nephrectomy was performed.

Case 2

An 18-year-old black female was initially admitted to the gynecology service at Duke Medical Center for a pelvic mass. The patient was seen

in the Duke emergency room with complaints of epigastric pain, nausea and vomiting. The patient had a one week history of lower abdominal pain. The review of systems was negative for gastrointestinal or genitourinary symptoms. The patient had a past history of congenital heart disease with repair of an atrial septal defect. A cystic



Fig. 1A. Hydronephrotic left upper pole collecting system with lateral displacement of the kidney.

From the Duke University Medical Center
Durham, N.C.

Reprint requests to Dr. Ladwig
Department of Radiology
Nash General Hospital
Rocky Mount, N.C. 27801

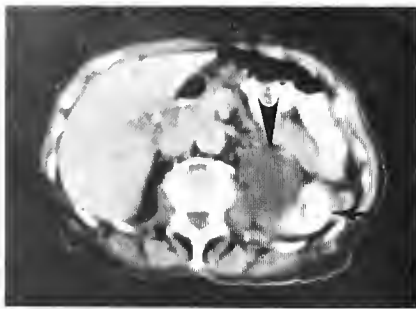


Fig. 1B. Hydronephrotic left upper renal pole on CT scan.

pelvic mass was detected with extension into the left lower quadrant of the abdomen. The mass measured 20 x 10 centimeters and was non-tender.

An excretory urogram revealed a large left abdominal and pelvic mass. Diagnostic possibilities centered on hydronephrosis either related to congenital abnormality or secondary to a gynecologic mass (Figure 2A). A duplicated system was in favor of a congenital abnormality on the left. A left retrograde pyelogram although unsuccessful in defining the ureter suggested an ectopic position of the orifice.

Computed tomography revealed a large abdominal and pelvic mass which extended from the inferior spleen to the bladder. The mass was water density and consistent with a hydronephrotic left kidney and ureter (Figures 2B, 2C). No normal left kidney could be identified.

A radionuclide renal scan demonstrated no renal function on the left and a mass inferior to the spleen.

Exploratory laparotomy confirmed a congenitally obstructed left ureterocele with massive hydro-ureteronephrosis of the upper pole system. The renal pelvis and lower



Fig. 2A. Large left retroperitoneal mass felt to be a hydronephrotic left kidney. Filling defect in the left side of the bladder due to a hydro-ureter.

ureteral system were atretic. A left nephroureterectomy was performed.

Case 3

A 54-year-old white male developed right flank pain 10 days after a fall. Initial evaluation at another institution included an excretory urogram. It demonstrated an abdominal mass displacing the left kidney. The patient was referred for further evaluation. Laboratory studies were normal.

Excretory urography with nephrotomography revealed a large mass in Gerota's fascia displacing and rotating the left kidney laterally (Figure 3A). Para-aortic and left retroperitoneal masses were present causing bilateral partial ureteral obstruction. The differential diag-

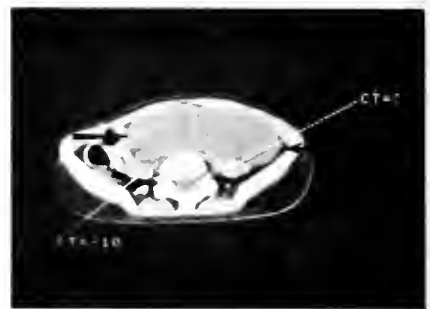


Fig. 2C. Left hydro-ureter within the pelvis on CT scan.

noses included lymphadenopathy, gastrointestinal carcinoma, traumatic hematoma, and duplication of the left renal collecting system with hydronephrosis. Ultrasound demonstrated a large cystic mass displacing the left kidney. The multiple para-aortic and abdominal masses were not clearly cystic. The differential possibilities included lymphoma or multiple tumors. Computed tomography revealed all masses were water density (Figures 3B, 3C). The impression was a duplicated left collecting system with massive hydronephrosis and a tortuous left upper pole ureter. Cystoscopy revealed a normal trigone, but no additional ureteral orifice.

Exploratory laparotomy confirmed duplication with obstruction of the left renal upper pole collecting system. Dilatation and tortuosity of the ureter represented the multiple retroperitoneal masses.

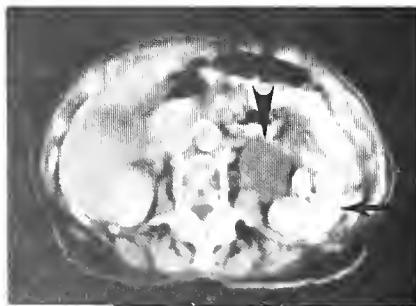


Fig. 1C. Left hydro-ureter on CT scan.



Fig. 2B. Hydronephrotic left kidney on CT scan.



Fig. 3A. Hydronephrotic left upper pole renal collecting system.



Fig. 3B. Hydronephrotic left upper renal pole on CT scan.

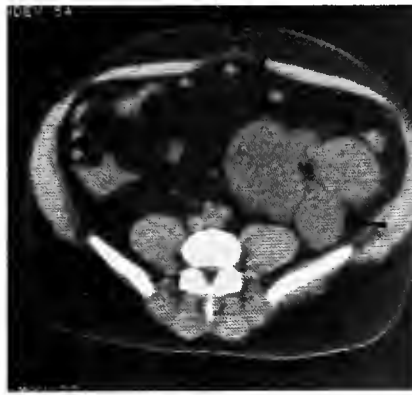


Fig. 3C. Left hydroureter on CT scan seen as multiple water density masses.

The upper pole ureter ended blindly near the prostatic fossa.

DISCUSSION

Duplication of the renal collecting system and ureter is the most common anomaly of the genitourinary system. The ureter from the upper pole moiety inserts below the trigone, may end in a ureterocele, and frequently causes obstruction. The kidney can be a hydronephrotic sac in these cases. The lower pole moiety has its ureteral insertion at the trigone and is frequently associated with reflux.

Excretory urography often provides the diagnosis of a hydro-

nephrotic upper pole duplex system by characteristic changes in the visualized portion of the kidney. Ultrasonography can also aid in this diagnosis by demonstration of a hydronephrotic upper pole collecting system and hydroureter.² However, ultrasonography is dependent upon operator technical skill and subject to variation. Computed tomography is not operator dependent and less subject to variation.

The three cases presented in this article demonstrate the value of computed tomography in the diagnosis of hydronephrosis of a duplex system in the adult. The initial pre-

sentation of this entity may be unusual. Although excretory urography suggested this diagnosis in each of these cases, other diagnoses more consistent with the patient's age and clinical findings also had to be considered. Ultrasonography which was performed only in the third case did not corroborate the diagnosis of duplicated kidney because the retroperitoneal masses were not clearly cystic. Computed tomography did demonstrate the water density of the retroperitoneal masses in all three cases. It correctly suggested the diagnosis in each case and in the first case demonstrated the renal mass tapering into a dilated tubular structure, the hydroureter.

Computed tomography has been previously demonstrated to be of significant value in the diagnosis of renal masses and urinary tract obstruction.³ Our cases show its usefulness in diagnosing obstructed duplex systems in adults.

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3. Sagel SS, Stanley RJ, Levitt RG, Geisse G. Computed tomography of the kidney. *Radiology* 1977;124:359-370.

The following curious physick advertisement is copied from a late New Hampshire paper.

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CHARLES TUTTLE, PHYSICIAN.

Milford, July 30, 1811

(Taken from THE STAR, printed in Raleigh, August 30, 1811)

(Submitted by J. Ross Shuping, M.D., Greenville, N.C.)

Drowning in North Carolina: How You Can Prevent Unnecessary Loss of Life

Van J. Stitt, Jr., M.D.

ABSTRACT An inordinate number of adolescents die by drowning each year. In North Carolina alone, 190 such deaths occur each year. More black males, ages 15-19 — approximately 16 per year — drown; the rate for white males of the same age is also high. This paper emphasizes the role of the medical community in prevention.

BETWEEN 5,000 and 6,000 people drown each year in the United States.¹ There were approximately 5,700 deaths by drowning in 1978 alone, surpassed only by motor vehicle deaths (52,000); deaths from falls (13,000); and deaths from burns (6,000). This makes drowning the fourth most common cause of accidental death in the United States.¹ North Carolina reported in the same year 189 drownings, exceeded only by the 1,515 fatalities due to motor vehicle accidents.^{1,2}

Groups at particular risk of drowning include teenage boys, all toddlers, and people with seizure disorders. In 1977, more than 7,126 bodies were recovered from waters in the United States and more than 1,100 of those drowning were children under the age of 15.¹ Most of these children died within a few feet of safety and in the presence of a supervising adult.

INCIDENCE AND SCENE OF ACCIDENTS

Home swimming pools were the most common site of drowning for young children. Among children one to four years old, 80%-90% of drowning accidents occurred in a swimming pool. Even though some

were able to float and did not panic initially, many were unable to get out of the water because the walk area around the pool was too high above the water level for them to reach it. A number of these toddlers had not entered the water intentionally but were riding or playing near the edge of the pool and fell in. The parents (who were often nearby) noted that their children were "missing," but did not search for them until it was too late. Although no data are available in regard to near-drowning, it is probably a conservative estimate that twice as many near-drownings occur as actual drownings. With the continuing increase in the number of home swimming pools, these episodes will no doubt increase.

North Carolina has no laws that bear on water safety. In particular, there are none that govern legal liabilities in regard to private pools. Counties, however, have instituted regulations which are somewhat similar in that they require a fenced-in area around open pools and that some rescue equipment be available. Failure to comply results in legal liability to pool owners.

The rate of death in North Carolina parallels the national rate. The overall drowning rate is higher for black males in the 15-24 age range. Black males have a three times greater chance of drowning than white males of the same age. Males

of both races were eight times more likely to drown than females. Drowning rates were higher for blacks in all age groups except the youngest. The low drowning rate for black toddlers may be due to the absence of private swimming pools in their neighborhoods. However, with greater mobility during adolescence, the frequency of pool use and drowning death increases. Failure to learn to swim at an early age probably predisposes older black children to the greater possibility of drowning.

Although pre-existing illnesses are associated with a small percentage of drownings, most can be attributed to over-estimation of swimming capabilities, exhaustion, or alcohol. A few of the victims, however, did have seizure disorders or were mentally retarded.

SEASON

As would be expected, most drownings are more likely to occur during the warmer months. Of the more than 7,000 recorded in 1977, half were reported during May, June, July, and August.¹ Drownings from October to April were more likely to result from boating, hunting or fishing accidents.

PREVENTION PROGRAMS

Swimming programs in North Carolina are operated primarily by the YMCA, municipalities and pri-

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vate clubs, which maintain high standards of safety. At public pools operating in larger communities trained lifeguards are required. The children participating in these programs, however, are not the ones who are drowning.

Many drownings can be prevented through education and training. Since those at highest risk are adolescents, both white and non-white, education could be initiated in the school system, possibly as a part of physical education programs. A recent study involving a large number of Australian school children revealed that water safety training was as important as swimming lessons.³

As part of the school program in Fayetteville, N.C., all fourth-graders are given water safety and swimming instructions as part of their school curriculum. Although there has been some controversy as to when the instruction should be offered, the system has generally agreed it is a good program. Since its inception, resident deaths in Cumberland County from drowning in the age group taught safety and survival techniques have been three in 1978; four in 1979; to zero in 1980. This represents an impressive example of how important water safety instruction can be.⁴

Little emphasis has been placed on the role of alcohol in drowning. Most alcohol studies have been in relation to motor vehicle accidents and a study to determine how many drownings are associated with alcohol or drug use should be undertaken.

Below are listed several rules⁵ that if followed may prove helpful in the prevention of drowning.

Swimming Safety

1. A good test for readiness to

learn to swim is the ability of the child to hold his own breath on command.

2. Organized swimming instruction is not recommended for children under three years of age because it is difficult for them to hold their disproportionately large heads out of the water.

3. Young children should be taught never to swim alone or unsupervised.

4. Allow diving only into water of known and sufficient depth.

5. Instruction in swimming should be obtained from qualified instructors.

6. False distress alarms should not be permitted.

7. No one should swim alone.

8. Always have competent adult supervision.

9. Do not swim after eating a heavy meal, drinking alcohol or taking medication.

Pool Safety

1. Pools require fences four to six feet high with a self-locking latch.

2. Do not use a diving board in a pool which is not deep enough. (Diving accidents cause 500 cases of quadriplegia annually in the United States.)

3. Avoid pool slides, which are potentially dangerous.

4. Keep essential rescue devices readily on hand at the pool.

5. Keep electrical appliances away from the pool.

6. Paint numbers on the pool's edge showing depths at various points.

7. Use stepladders at least three feet wide and made of non-slippery material with night-glow tape.

8. Put nothing outside the pool fence which will enable a child to climb over it.

9. Allow no riding toys beside the pool.

10. Place a tamper-proof cover on the pool when it is not in use.

11. Do not use the pool after eating a large meal or after drinking alcohol.

12. Do not swim in the dark.

Boat Safety

1. At least one adult swimmer should be present for each non-swimming child.

2. Do not overload the boat.

3. Do not allow standing in small boats.

4. Flotation life jackets should be worn by every passenger, whether he can swim or not.

5. Make sure the boat has been properly maintained.

6. Check weather forecast to avoid getting caught in storms.

7. Know the boat's limitations.

8. Do not go out in a boat if you have been drinking or have taken medication.

CONCLUSION

At a time when deaths from motor vehicle accidents appear to be decreasing, a disproportionate number of children are drowning. It is the conclusion of most studies that education and training could significantly reduce this number. Intensified supervision, instruction and enforcement of safe water (pool) and boating policies and emphasis on education of water safety in high risk groups seem justified.

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THOMAS HUXLEY [1825-1895]

Education is the instruction of the intellect in the laws of Nature, under which name I include not merely things and their forces, but men and their ways.

A Liberal Education

The Effect of Legal Change On Patterns of Psychiatric Care: The Input of Change of Commitment Law

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Tom Plott and John Hiatt

ABSTRACT In 1979, the North Carolina civil commitment law was revised with the intent that commitment be easier. In 1978, before enactment of this legislation, 100 committed patients at Broughton Hospital, which serves the western region of North Carolina, were randomly selected for study. Attitudes of patients, their families, and local committing physicians toward the commitment procedure were assessed by voluntary questionnaire. Patients expressed generally positive attitudes toward commitment, demonstrated some insight into their condition, and viewed their hearing as fair. In contrast, the majority of family members and committing physicians viewed commitment unfavorably. In particular, family members were found to be highly stressed by commitment procedures and to have few sources of support from the mental health system. In a similar study performed one year after passage of the commitment legislation, no change was observed in proportion of patients coming to hearing or of those committed at the time of hearing and attitudes surveyed showed little change from 1978 to 1980. A slightly higher proportion of patients' families expressed dissatisfaction with commitment, indicating that additional supportive services for families of committed patients are needed.

IN the state of North Carolina, involuntary commitment for treatment in a mental health facility is obtained through a procedure common to many other states. A petition may be originated by any citizen, but is most often sworn out by a member of the respondent's family. This petition must be signed by a judge or magistrate. A physician's referral must be included with the petition unless the respondent's behavior warrants emergency intervention. The respondent is taken to a regional psychiatric hospital where he is examined by a physician within 24 hours of arrival. Unless he is released by the hospital physician, the patient has a hearing within 10 days of his admission. In the hearing, evidence from the hos-

pital physician and/or the testimony of anyone concerned, usually the petitioner, is presented before a district court judge. An attorney is available to represent the patient, and another to represent the hospital and the petitioner. The maximum initial commitment is 90 days. Commitment may be for treatment at the regional facility, outpatient treatment at a local mental health center, or a combination of the two.

Largely due to public dissatisfaction with the process of commitment, the commitment law was changed in October, 1979 (North Carolina General Statute 122-58 Involuntary Commitment Law Revised). This change was designed to facilitate commitment of patients who are clearly ill and in need of treatment but not immediately dangerous. The term "imminently" was deleted as a modifier for dangerous, and danger was explicitly expanded to include the likelihood of the indi-

vidual's suffering serious physical debilitation "without care, supervision, and continuous assistance from people not otherwise available." In 1978, one year before enactment of the new law, a study of the commitment process was conducted at Broughton Hospital, the state psychiatric hospital serving the western region of North Carolina¹. To assess the impact of the change in law, the study was repeated for a similar group of patients admitted to Broughton Hospital during August of 1980.

Methods:

Committed patients were randomly selected each week during July and August from all filed admission cards until 100 patients were obtained, excluding inebriates. Questionnaires were designed to assess attitudes toward the commitment process and perceived effects of commitment. Different question-

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naires were directed to the patient, his family, and the committing physician in the community. In all cases, the purposes of the study were explained and approved written consent was obtained. Hospital charts were evaluated for adequacy of legal documentation and impact of commitment on the treatment process. The court hearing was observed and evaluated as to time spent, legality of process, and atmosphere. In 1980 only, a questionnaire designed to elicit opinion on the effects of the legal change on the patient population and commitment was sent to all psychiatrists, psychologists, social workers, and nursing supervisors. Table I presents the proportion responding to the questionnaires of each group surveyed.

Results:

Characteristics of the patient groups: Table II summarizes the age, sex, race, marital status, and history of previous hospitalization of patients in the two studies. The groups are demographically comparable. A large proportion of the patients were unmarried and unemployed and had histories of multiple hospitalizations. Diagnoses of patients from both studies are presented in Table III. The percentage of depressed patients increased from 8% in 1978 to 14% in 1980, and the percentage of patients diagnosed as schizophrenic decreased from 36% to 27%. In 1980, 49% of the patients had been seen in local mental health centers before their admission; that figure was 63% in the 1978 study.

TABLE II

Demographic Data of Patient Population Studied Before and After Change in North Carolina Commitment Law

	1978 Study	1980 Study
AGE		
Mean	41.0	35.6
Range	16-86	18-65
SEX		
Male	53	54
Female	47	46
RACE		
White	79	79
Black	21	21
MARITAL STATUS		
Single	35	43
Married	32	31
Separated	11	12
Divorced	11	9
Widowed	11	5
EMPLOYMENT		
Employed	12	16
Unemployed	66	83
Retired	9	1
PREVIOUS HOSPITALIZATIONS		
None	33	28
1-4	37	31
5	30	41

Legal process evaluation: Outcome of the commitment process before and after the legal change is summarized in Table IV. Of the patients who came to hearing, 26/72 (36.1%) were committed in 1978, and 30/78 (38.5%) in 1980. There was no overall change in proportion of patients committed after the change in commitment law. The only notable difference is a reduction in the number of patients signing in on voluntary status prior to hearing. This was due in part to a decrease in the number of offers of voluntary status being made to patients, since 24% of the 1980 patients responding said they were offered voluntary status compared with 57% in the 1978 study.

In the 1978 study, the proportion of patients committed was greater (44%) when both the physician and family testified at the hearing than when either family only (33%) or doctor only (25%) or neither (0%) testified. In the 1980 study, 68% of patients were committed when both family and physician testified, com-

TABLE III

Diagnostic Data of Committed Patients Studied Before and After Change in North Carolina Commitment Law

Diagnosis	1978 Study	1980 Study
Organic Brain Syndromes	17 (22%)	7 (8%)
Mental Retardation	3 (4%)	8 (9%)
Depression	6 (8%)	12 (14%)
Schizophrenia	28 (36%)	24 (27%)
Manic-Depressive Disease	8 (10%)	10 (11%)
Personality Disorders	3 (4%)	7 (8%)
Alcohol/Drug Related Syndromes	5 (7%)	11 (13%)
Paranoid State	1 (1%)	1 (1%)
Adjustment Reactions	3 (4%)	3 (3%)
Unspecified Psychosis	0 (0%)	5 (6%)
No Mental Disorder/Diagnosis Deferred	3 (4%)	4 (5%)

TABLE I

Proportion of Groups Surveyed who Responded to Questionnaire

	Proportion Responding (%)	
Group	1978 Study	1980 Study
Patients	54	68
Families	44	58
Physicians	56	33*
Hospital Staff	—	32

*Several physicians in the 1980 survey participated in commitment of more than one patient, such that committing physicians of 56 patients are represented.

TABLE IV

Outcome of Commitment Process in 100 Patients Before and After North Carolina 1979 Commitment Law Change

	1978 Study	1980 Study
Patient released as not dangerous by hospital physician prior to hearing	8	14
Patient signed in as voluntary patient prior to hearing	20	8
Patient came to hearing	72	78
Committed	26	30
Released	46	48
Signed in after release	7	6

pared with 27% for family only, 23% for doctor only, and 0% for neither. No relationship was found between number of previous admissions and outcome of hearing in either study. Both studies found that all patients talked with the patient attorney before the hearing 10-15 minutes on the average. A very high percentage (92%/91%, 1978/1980) felt they were adequately represented by counsel. A large decrease, 39% in the 1980 study compared to 76% of patients in the 1978 study, stated courtroom proceedings were explained to them before the hearing.

In both studies, hearing procedures were evaluated positively by the research associate. All proceedings were characterized by relative absence of background noise, attentiveness of those present, and courteous treatment of the respondent. A large percentage of patients in both studies rated their hearing as fair: 92% in 1978 and 83% in 1980. However, a lower percentage of families responding rated the hearing as fair (67% in 1978), but this proportion increased to 84% in the 1980 study.

We attempted to assess the reality of dangerousness by family questionnaire and analysis of hospital records. A significant proportion of patients were found to have manifested evidence of danger to self or others by action or threat during hospitalization either prior to hearing (17%) or during the remainder of their stay (26%) in the first study and (20%) and (27%) in the second. Forty-two percent of families surveyed checked at least one of four options describing threats or violence to self or others in the first study, and 65% in the second. Twenty-eight percent of the patients rated themselves as dangerous to themselves or others in 1978, and 51% in 1980.

Patient Attitudes: A high proportion of patients (75%) in the 1980 study demonstrated insight into their condition by rating themselves as either dangerous or mentally ill or both. In the 1978 study the figure was 43%. However, the percentage of patients in the 1980 study who said they should have been committed (46%) remained unchanged

TABLE V

Negative Attitudes Toward Commitment Cited by Patients Studied Before and After the 1979 Commitment Law Change

Statement	Proportion of Patients Endorsing	
	1978 Study	1980 Study
Feel bitter or resent commitment	21%	19%
Commitment affected treatment adversely	12%	11%
No one helpful	29%	35%
Feel I have broken law	9%	8%
Mad at someone about commitment	19%	16%
Should be alternatives to commitment	51%	49%

from 1978 (46%). In 1980, 18% of patients checked a blank stating, "It was all a mistake," compared with 22% in 1978. Most patients cited some negative attitudes toward commitment. Table V summarizes the proportion of patients citing negative attitudes toward commitment in the 1978 and 1980 studies. Patients' attitudes toward the legal aspects of the commitment process were surprisingly favorable in both studies. A very high proportion felt they were adequately represented by the attorney (92%/91%) and their hearing was fair (92%/83%). The proportion of patients who felt their privacy had been violated by the commitment procedure declined from 22% in 1978 to 10% in 1980.

Impact of Commitment on Hospital Treatment: The majority of patients were treated with some form of chemotherapy. Drug treatment in the two studies is summarized in Table VI. Only three patients in 1978 and six patients in 1980 received no drug treatment. The largest proportion of patients were treated with antipsychotic agents

alone, or in combination with other agents. Fewer patients were treated with antidepressants, and most of these also received antipsychotic agents. From review of hospital charts, it was difficult to judge accurately the extent to which involuntary hospitalization had affected length of stay and treatment. Physicians do not customarily include reference to such effects in their notes. On the basis of self-rating, 12%/11% of patients felt commitment influenced their treatment process. Twenty-four percent to twenty-five percent of patients were documented as showing some lack of cooperation with treatment procedure.

The Local Committing Physician: In the 1978 study, 56 committing physicians responded to the questionnaire; 33 responded in 1980. However, in the second study, many of the physicians committed more than one of the patients in the study, such that physicians of 56 of the 100 patients responded. A disturbing finding in the 1978 study was that seven of the 56 patients whose referring

TABLE VI

Medication Received by Committed Patients at Broughton Hospital in Two Studies Before and After Passage of the North Carolina Commitment Law in 1979

Medication	1978 Study		1980 Study	
	Number of Patients		Number of Patients	
Antipsychotic Agents	69		69	
with anticonvulsants	6		5	
with antiparkinson agents	15		26	
ANTIDEPRESSANTS	13		18	
with antipsychotic agents	12		12	
LITHIUM CARBONATE	7		12	
with antipsychotic agents	6		8	
MINOR TRANQUILIZERS	4		13	
NO DRUGS	3		6	

physician responded were unknown to the physician and without record in his office. In the 1980 study, no physicians disavowed knowledge of patients whose commitment papers they had signed. In the 1978 study, only 38% of the patients were new to the committing physician. The majority had been seen for times varying from one to more than five years. In the 1980 sample, 61% of the patients were evaluated by the committing physician for the first time during commitment. Table VII summarizes sources of information cited as used by the local committing physicians in the 1978 and 1980 studies. An increase in citation of the diagnostic interview from 57% to 82% was observed. Other sources commonly cited, such as family members, friends, and police, were similar for both studies. In the 1978 study, half of the physicians cited family insistence to be an extenuating circumstance leading to use of commitment; in 1980, 24% of the physicians cited family insistence. Lack of local resources was cited as a problem leading to use of commitment by 21% of physicians in 1978 and by 31% in 1980.

Physicians were asked whether they felt existing commitment laws were adequate. In 1978, 49% responded no, and in 1980, 53% responded no. A criticism made by physicians in both studies was that many patients were released too soon. Problems with "dangerousness" as a criterion were frequently cited. The need for clinicians to have more control over the process, the slowness of the process, and the

number of evaluations being requested for patients never seen before, were also cited.

Impact of Commitment on Patients' Families: A large proportion of patients' families were active participants in the commitment process. In the 1978 study, 61% of the families initiated the petition; 84% attended the court hearing; and 76% testified. In the 1980 sample, 86% of the families initiated the petition, but the percent of families attending the hearing dropped to 50%, and those testifying to 46%. Evidence of danger cited by families on their questionnaires in both studies (1978/1980) included: violent acts (22%/39%), threat of violence (24%/15%), suicide attempt (8%/8%), and suicide threat (8%/9%). In the 1980 study, failure to care for self was mentioned by 11% of the families. Families viewed the process of commitment negatively in both studies. In 1978, 61% of families felt the patient was released too soon, and this proportion increased to 72% in the 1980 study. The proportion of families who cited that commitment hurt their relationship with the patient (31%) and who felt the hearing unfair (33%) in 1978 dropped to 8% and 16% in 1980. Forty-eight percent of the families in 1978 and 40% in 1980 stated that the commitment process had had some "bad effects" on the family. Emotional upset was given as the bad effect in 53% of the cases in 1978, and 74% in 1980. Damage to relationship with the patient and loss of money and time at work were also mentioned. In the 1980 sample, only 19% of the patients' families talked with the hospital attorney who is responsible for representation of the hospital and family. Of those families who attended the hearing, only 13% were accompanied by a case worker. Both figures represent declines from the earlier study (21% contacted by attorney and 30% accompanied by case worker).

Commitment as Viewed by Hospital Staff: Of the 32 Broughton Hospital employees responding to our questionnaire, 71% cited that they had observed no change in the patient population as a result of the change in the commitment law. Several social workers reported an

increase in willingness to testify on the part of family members, but it was also mentioned that more families are frustrated by the "mechanical" nature of the hearings and feel their testimony has little effect. Fifty-three percent of employees responded that it is easier to get patients committed now than before passage of the 1979 law, but only 29% of hospital staff members stated that the present commitment law is adequate. Reasons given for inadequacy included: inappropriateness of dangerousness as a criterion (9), too strict criteria for establishing dangerousness (1), inadequacy of the 10 days (or less) evaluation period before hearing (2), too much power being vested in those with little understanding of the psychiatric client (1).

Discussion:

Data from the present study suffers from the limitations of a voluntary questionnaire. The loss of data from non-responding subjects in all categories may produce substantial bias of results. However, comparison of the two studies done in an identical manner during similar time periods in 1978 and 1980 may be subject to less distortion. The views reported represent a large proportion of patients and families involved in the commitment procedure and may be considered to reflect general attitudes.

The major purpose of the study was to assess the practical effects of change in the North Carolina commitment law, which was designed to facilitate the commitment process. Demographically, the study populations in 1978 and 1980 were nearly identical. A similar proportion of patients came to hearing, and the proportion of those patients committed at hearing was similar. Hospital records indicate a small increase in percent of patients committed, from 26% to 35%. However, these data are confounded by inclusion of recommitments. Our data, based on two randomly selected samples, indicate that there has been little or no change in the actual process of commitment of newly admitted patients subsequent to the change in law.

TABLE VII

Sources of Information Cited as Used by Committing Physicians in Studies Before and After Passage of the North Carolina Commitment Law in 1979

Source of Information	Percent Physicians Citing	
	1978 Study	1980 Study
Diagnostic interview	57%	82%
Family	65%	43%
Friends	10%	—
Police	33%	47%
Social service agency	4%	—

Patient attitudes toward the commitment procedure were surprisingly favorable. A large majority of patients queried in both 1978 and 1980 felt that their hearing was fair and that they were adequately represented by counsel. Although a proportion of patients ranging from 9% to as high as 35% endorsed a number of negative statements about the commitment process, about half of the patients in both studies stated they should have been committed. An increase of proportion of patients reporting themselves as either dangerous or mentally ill from 43% to 75% was observed from the 1978 to the 1980 study. This increase may be in part due to the change in legal definition of dangerousness. Either from discussions with the patients' attorney or from arguments during the hearing, many patients were aware that inability to care for oneself currently constitutes dangerousness.

The favorable attitudes of patients toward the commitment procedure were not reflected in any other of the groups surveyed. Approximately half of the local physicians participating in the commitment process from both studies responded that they felt commitment laws were inadequate. A very high proportion of families of patients expressed dissatisfaction with the commitment procedure, particularly premature release of the committed patients. In fact, the proportion of families citing premature release as a problem increased from 61% in 1978 to 72% in 1980. Of the Broughton Hospital staff surveyed in 1980, 71% felt commitment laws were inadequate. Thus, the major-

ity of persons participating in the committing process and subsequent treatment are dissatisfied with the commitment process. Comparison of data from the 1978 and 1980 studies demonstrates either no change in attitudes of these groups toward commitment or an increasing dissatisfaction. Since the passage of the North Carolina commitment law was partially in response to dissatisfaction with the commitment procedure on the part of these groups, it must be regarded as a failure with respect to this goal.

Of particular note in both studies was the extreme dissatisfaction of families of patients undergoing commitment. The family participates actively in the commitment process for most patients, usually by initiation of the petition and later by participation in the commitment hearing. The hearing procedures are not scheduled with respect to convenience of family members. For the commitment hearing, all families are notified to be at court at 9 a.m. With an average of 88 cases per week on the docket (sampling weeks only), the average wait before being called into court was 4½ hours, ranging up to 12 hours. Several families, as well as others present to give testimony, had to leave before their cases were called. Other family members cited previous delays of this sort as reason for not appearing in the first place. Such delays were common in both 1978 and 1980. Nearly half of families felt commitment had bad effects on the family, and a larger proportion reported emotional upset resulting from the commitment procedure. These figures showed little or no

change from 1978 to 1980. Families are highly stressed initially by the aberrant behavior of the patient. Violent and dangerous acts on the part of the patient were specified by 22% of families in 1978 and 39% in 1980. They are subjected to unnecessarily long waits before the hearing. Although a hospital attorney has been appointed to represent the hospital and family at the hearing, only 19% of families talked with the attorney before the hearing. There are no other sources of support for the family at Broughton Hospital, although the patient who is committed has a variety of services rendered to him, both diagnostic and therapeutic, before and after the commitment hearing.

The data from the present study clearly indicate that the families of committed patients represent a troubled unit. The usual form of intervention, that of removal and hospitalization of the patient, ignores the problem existing within the entire family unit. The family remains dissatisfied and in need of supportive services. Provision of supportive services for families of disturbed and potentially dangerous patients may be of greater utility than alteration of commitment laws in the alleviation of current dissatisfaction with the commitment process.

Acknowledgment

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Perhaps the most valuable result of all education is the ability to make yourself do the thing you have to do, when it ought to be done, and whether you like it or not; it is the first lesson to be learned; and, however early a man's training begins, it is probably the last lesson that he learns thoroughly.

Technical Education

Toxic Encounters of the Dangerous Kind

THE NUTMEG CONNECTION

When the economy takes a turn downward, much of the business community suffers — regardless of the size or type of industry. The consumer suffers also — prices go up and some items get scarce. This condition is also true of the illicit drug market. The “turn-ons” of choice become more expensive and harder to find. When such a condition occurs in the “drug community” new “highs” are often produced or old ones resurrected to be sold to a demanding public. Such is possibly the case with nutmeg.

Nutmeg has been used as a hallucinogen since the time of the Crusades. It is alleged that it was introduced into Europe by the Arabs. This commonly used spice comes from the dried seed kernels of a tree grown in the South Pacific and East Indies. It has been used since the Middle Ages as a carminative, stimulant, narcotic, emmenagogue and abortifacient. This report concerns itself with the diagnosis and management of nutmeg toxicity.

The purpose of taking nutmeg is to produce a “high,” i.e., a mind-altering experience. This is usually achieved by the ingestion of 1-3 whole nutmegs or 5-15 grams of the grated spice (a can of McCormick’s nutmeg weighs 75 grams; 2 tablespoons of this is equal to approximately 14 grams or the equivalent of two grated nutmegs). In 2 to 6 hours after ingestion, euphoria and hallucinations can occur. The “trip” resulting from this encounter can last nine hours or more. The toxic effects of nutmeg overdose in an adult can occur with the ingestion of as little as 5 grams. This overdose resembles an anticholinergic toxic episode — cutaneous flushing, tachycardia, decreased salivation, fever and central nervous system (CNS) excitation. In many cases the resemblance to anticholinergic poisoning (atropine, belladonna, antihistamines,

Jimson Weed, etc.) can be confusing but in the classic case, nutmeg poisoning produces *miosis* and not *mydriasis* as with an anticholinergic poisoning. This is not an absolute distinguishing feature, of course, but should be looked for.

Nutmeg overdose can also cause burning epigastric pain with or without emesis, abdominal cramps and vertigo, especially if the nutmeg is not fresh. For some of us the toxic encounter with nutmeg will probably occur when we are presented with a patient who is undergoing an acute psychotic episode resulting from the accidental or purposeful overdose. Such a patient shows dramatic clinical features such as marked CNS excitation, hallucinations (especially visual) with spatial and color distortions along with feelings of unreality and depersonalization. These patients can be quite hyperactive and belligerent and thus resemble those who have taken PCP (angel-dust). The clinical course may be severe with shock, coma and even death as a consequence; usually complete recovery occurs within 24 hours. The principal active ingredient causing the anticholinergic type of syndrome is *myristicin* but nutmeg also contains *elemicin* which can be metabolized to two psychotomimetic amphetamines whose psychodelic and physiological effects resemble LSD.

The treatment of nutmeg toxicity is mainly supportive as no antidote is available. It seems to me that if ever I needed an hallucinogen it would not be *nutmeg*; if you can’t afford the good stuff, don’t indulge. I prefer smoking banana peels — if the truth were known.

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Editorials

LAENNEC'S PARADIGM

Now that the bicentennial of the birth of René Théophile Hyacinthe Laennec has safely passed, we can ponder on the attention given such random dates as birthdays. Specific they may be for the individual but certainly hardly predictive of future achievement. Better we should celebrate as Laennec's day August 15, the bicentennial of his greatest achievement, for *De l'Auscultation médiate*, his description of his adventure with his stethoscope, which first appeared on August 15, 1819. Its subtitle, *Traité du Diagnostic des Maladies des Poumons et du Cœur*, clearly presages the medical revolution it provoked. Yet many of his contemporaries could not grasp the significance of Laennec's work and protested the indelicacy of applying the stethoscope to the female breast.

Stethoscope was a noun of Laennec's own construction from Greek words meaning to inspect the chest. The four divisions of physical examination of the chest: inspection, palpation, percussion and auscultation, would be some time in their establishment. Percussion itself was a diagnostic child, Auenbrugger's *Inventum Novum* having appeared in 1761. But 47 years passed before a translation from Latin to English by Jean Nicolas Corvisart, one of Laennec's teachers at the Salpêtrière and Charité hospitals in Paris, was published in 1808. Laennec must have been well prepared in such an environment to be a pioneer in correlating physical and pathological findings in diseases of the heart and lungs. In effect he was taking Morgagni's *Seats and Causes of Diseases Investigated by Anatomy*, published also in 1761, from the dissecting table to the bedside and making it essential for the clinician to return to gross and microscopic anatomy in the practice of his art.

In transforming physical diagnosis Laennec initiated a paradigm, Kuhn's term for the phenomenon which permits the consolidation of accumulated scientific achievement into a new mode of learning and doing.¹ As such it is the quintessence of normal science, firmly based on its sound past, as it supplies "the foundation for its future practice." Laennec's paradigm ruled clinical medicine for more than a century and still competes, more than symbolically, with the new paradigm of measurement and may be reasserting itself in the productive non-invasive examination of the human body.

For stethoscopy was the first dramatic penetration of the skin to give knowledge without altering that barrier. Perhaps then the advent of radioisotopic diagnostic procedures, ultrasound examinations, computerized tomography and nuclear magnetic resonance is not truly representative of a new paradigm

but a marvelous expansion of the old. By contrast the chemical invasion of medicine dating ultimately to Wohler's* synthesis of urea in 1828 may be the new paradigm, offering accurately reproducible measurement of discrete entities in body fluids and tissues.

Medicine seems to require convergence of different paradigms. Scientific and technological contributions in physics, biology and chemistry are more obvious because of their structure and validation, whereas the offerings of psychology, sociology, and economics are not yet miscible because they so frequently defy objective testing and measurement. As neurochemistry evolves, we may see some resolution of the uncertainties we face in the analysis of human behavior. But in the affective domain, where lie culture, character and intelligence, we cannot yet almost by definition expect a fruitful paradigm. For there are always those whose temperaments lie in the realm of the metaphysical and others who must have verifiable data for their testing of reality.

Laennec's paradigm, as must all paradigms, has invaded the market-place and has made many comrades in sound without their knowledge. Acoustic emissions from bones are being studied although these sounds can hardly be classified as wet or dry rales, crackles or wheezes. Even the music of the spheres has been recorded as Voyager 2 data acquired during the course of its adventure with Saturn has been processed through a 16-channel music synthesizer. While the music heard must be aleatory, we are told it haunts the mind.

Advertisers have long understood that the symbols of medicine, the white coat and the stethoscope, help when consumers are being urged to "trust me." While the white coat sells antihemorrhoidal preparations and headache remedies, the more prestigious stethoscope is used in quality control in the manufacture of the Rolls-Royce, to assure quietness and to exclude the music of the spheres and earthly noise.

Automobile mechanics though have been following Laennec's path for a long time. Some use a metal rod in place of the bell or diaphragm and apply their stethoscopes to block, water pump, flywheel or brake drum to detect signs of pathologic friction or arrhythmias. In Model T days, pioneer automotive stethoscopists used as did Laennec the monoaural technique. One to my knowledge placed his thumb on one end of a hearthbroom stick and the other end on the target organ of the engine. He then applied an ear to his

*Friedrich Wohler (1800-1882) received his degree in medicine and surgery in 1823 before pursuing chemistry. His synthesis of urea helped vanquish vitalism from scientific laboratories, a necessary step in the evolution of the chemical paradigm.

thumb and made his diagnosis. Scientists are where you find them.

J.H.F.

Reference

1. Kuhn TS. The structure of scientific revolutions. In: *The International Encyclopedia of Unified Science*. Vol 2, No 2. Chicago: University of Chicago Press, 1970.

THE CORPOREAL ORCHESTRA

Medical schools 35 years ago bore little resemblance to today's temples of learning. Syphilis and pneumococcal pneumonia were finally being brought low by penicillin, malaria was giving up, grudgingly, its ascendancy in the South, and streptomycin held some promise as an antituberculous drug. But osteology still maintained its place in anatomy, the view presumably being that each bony prominence and each portal for a penetrating vessel had spiritual, if not material, importance.

Physical diagnosis still held a prominent place in the curriculum in the second year when the mysteries of auscultation were particularly emphasized. Students practiced on each other to learn the normal and struggled to grasp the importance of rales and to appreciate the necessity of classifying them. Our texts went into inordinate detail so that when we examined our first patients we applied stethoscope with fear and trembling to expectant chests. We tried to ascertain frequency, pitch, amplitude, duration of sounds, quality, and intensity, and failed utterly. Finally we gave up and let our ears learn for us. Had we aspired to be acoustical engineers, we would not have gone to medical school and we would have sought better instruments for sonic analysis.

Fortunately, antibiotics and more frequent chest x-rays made auscultation of the chest less necessary in diagnosis and management of the sick, so that some now consider the stethoscope an historical relic, a medical equivalent of the caveman's flint. But we cling still to the instrument as a symbol of the laying on of hands. The tubes become conduits for communication but we don't receive many messages about egophony and pectoriloquy anymore.

The retreat of auscultation should lead us to listen more carefully to other human sounds. After all is not the rite of masculine passage heralded by embarrassing vocal changes, sign and symptom of the arrival of testosterone, and cannot a mother diagnose her baby's predicament by a cry, without conscious sonic analysis? Have not many church choirs in small American towns given unknowingly a course in the natural history of hypothyroidism? First a slender young soprano, then a more matronly alto, finally a dry-skinned, round-faced bass before thyroid extract restores the soprano voice, if not the maidenly figure.

Mental states in adults as well as babies may be manifested by changes in vocal sound. Ostwald has confirmed by objective sonic analysis what we have known all along about the effects of anger, anxiety, excitement, and depression on speech and has sug-

gested that such analysis deserves wider application in psychiatry.

Listening to breath sounds at the mouth may be helpful too. Noisy breathing points to chronic pulmonary disease and many a thin wife of a fat husband has been concerned about his snoring and episodic apnea, so characteristic of nocturnal respiratory obstruction. The loudness of these sounds at the mouth does indeed reflect the severity of obstruction and indicates turbulence of air flow through a narrowed bronchial tree. That variations in the intensity of such noise correlate with the degree of obstruction can be neatly demonstrated by listening carefully to an asthmatic patient before and after the administration of effective bronchodilators. Comparison with measurements of expiratory volume at one second (FEV₁) and other indices of air flow offers adequate confirmation of the accuracy of one's ear.¹

Also easily audible at the mouth are belches, burps and rifts, eructations from the stomach — of more social than medical significance. These sounds have escaped extensive analysis except when aerophagia is considered. Air swallows also complain, not surprisingly, of excessive abdominal gas leading one British author to write of flatus ↑ and flatus ↓. Suppression of flatus ↓ leading to increased pressure within the unvented colon and rectum has been implicated in the causation of diverticulosis. If this hypothesis can be confirmed, a strong case for diverticulosis and diverticulitis as social diseases could be made.

Nowhere is the corporeal orchestra more in evidence than on auscultation of the empty abdomen. The patient who skips breakfast because of anticipated blood tests is a particular problem because even the most careful listener cannot distinguish the arterial bruit suggestive of renal arterial stenosis or abdominal aortic aneurysm from peristaltic assertion. Often patients are quite distressed by their own borborygmi which keep them company at night before they fall asleep. In a way what they hear is noise akin to that an orchestra makes warming up and to chatter in the auditorium before the entrance of the concertmaster. The abdominal groans are quieted by eating just as the audience is stilled by the conductor's baton.

Other sounds deserve extensive comment but can be noted only briefly. Many of us will never hear the whistling pneumothorax or the succussion splash so fondly referred to by the phthysiologists of yore. But we will all too soon reluctantly listen to our own creaking knees and grating cervical vertebrae as we develop the medical judgment that comes with the maturing of enthusiasm and the aging of joints.

J.H.F.

Reference

1. Forgacs P. The functional basis of pulmonary sounds. *Chest* 1978; 73:399-405.

ERRATUM: On page 226 of the March 1982 NCMJ under "Does the Seabright Bantam Have the 'Seabright Bantam Syndrome'?" the first sentence of the second paragraph should read: Pseudo-hypoparathyroidism differs from hypoparathyroidism in that patients with the former who are given parathyroid hormone intravenously do not have the expected phosphate diuresis nor do they excrete increased amounts of cyclic AMP.

From The Desk of The Managing Editor

STATE INVOLVEMENT IN SCIENCE AND TECHNOLOGY

James B. Hunt, Jr.
Governor, State of North Carolina

Note: In light of the recent articles on hazardous waste (see April and May 1982 NCMJ) which spoke to the issue of medicine's and government's roles in the current technological/chemical revolution and in light of North Carolina's unique position with its medical schools, School of Public Health at the University of North Carolina, and Research Triangle Park, the following article is offered.

A.A.H.

Much has been accomplished over the last 30 to 40 years by our prevailing structure of science and technology. Now, however, a crisis is emerging: U.S. output per man-hour has leveled off or declined in recent years. Results of basic research no longer percolate through our economy fast enough or effectively enough to increase productivity substantially. Education in the United States is less rigorous than that of several other nations. And we have not devised the organizational means to generate and use knowledge of how to manage land, water, and air resources properly and to minimize dangers associated with toxic, hazardous, and low-level radiation waste.

In dealing with the emerging crisis, we must foster throughout society the creative potential of science

and technology by technical and organizational innovation, which together constitute technological innovation. I contend that the center of gravity for technological innovation must shift from the federal government to state governments.

Of the 184 research universities of this nation, 119 are public institutions, most of which are supported by state governments. Elementary and secondary educational systems are the responsibility of state and local governments, who (regardless of action by the federal government) must take the lead if significant improvements are to be achieved. State and local governments are the prime points of contact with the many aspects of economic activity that entail industry-government interaction. Finally, people are essential in technological innovation, and people can more easily relate to state and local governments than to distant federal agencies.

The experience of North Carolina and a few other states illustrates how a state government can forge these various interrelations. The North Carolina Board of Science and Technology is the unit that maps much of our strategy, building on the work of our universities and the influence of our Research Triangle Park. I chair this 15-member board; the remaining members are scientists from our public and private research institutions and officials from state and local government. Other groups advise me; one is a council of business leaders from across North Carolina. As a consequence, new industrial investment in North Carolina has averaged approximately \$2 billion per year for the past 5 years. Our unemployment rate is about 2 percent below the national rate.

In North Carolina we are also investing in people, particularly young people. In our elementary and secondary schools, we have introduced competency testing, raised the level of teacher training and pay, reduced class size, and taken other measures to improve education. Significant improvements in national test scores are one indication that these changes are having an effect. In addition, we have established the North Carolina School of Science and Mathematics, a residential high school for students with very high aptitudes in these subjects. In its first year, with 150 students enrolled, this school had the second largest number of National Merit Scholarship semifinalists of any school in the nation.

My last example consists of our Microelectronics Center and our Biotechnology Center. The former is designed to enable six leading research institutions in North Carolina to have access to sophisticated microelectronics research equipment on a sustained basis. The latter is beginning on a relatively small scale, but represents a long-run commitment to this



Governor James B. Hunt, Jr.

field. Other states, such as California, Minnesota, Michigan, and Florida, are taking significant action in relation to such fields of exploration.

Technological innovation must be construed as more than an end in itself. Its larger purpose is meeting the needs and desires of people. This is a function of values and beliefs and of political and economic processes. The emerging crisis I have mentioned is a reflection of such concerns. Government — particularly state government in partnership with academia, industry, and people — has a clear responsibility in resolving this crisis.

Adapted from an address presented on 4 January 1982 at the AAAS Annual Meeting. Reprinted with permission from *Science* Vol. 215, p. 617, 5 February 1982. Copyright 1982 by the American Association for the Advancement of Science.

MID-WINTER CONFERENCE 1982: HEALTH CARE COST CONTAINMENT

“Medicine in the ’80s” was the theme for this year’s Mid-Winter Conference held in Winston-Salem, and, appropriately depicting the ’80s, health care cost was the subject most discussed (as it was at the Executive Council meeting held during the Conference — see May 1982 *North Carolina Medical Journal*). Cost containment, its current status and its future, proved to be a stimulating topic for speaker, participant, and observer alike.

The speakers, representing medicine, hospitals, business, and government, all agreed that physicians are important in developing solutions of the cost containment problem. As panelist Lawrence Cutchin, M.D., said, “. . . I don’t believe effective cost containment can be implemented without the active and informed involvement of physicians.” There was also general agreement with regards to the causes of increased health care costs, as outlined by Cutchin:

- Physicians, concerned with providing quality care, have not in the past had to consider the cost of care.



Lawrence Cutchin, M.D.
“I don’t believe effective cost containment can be implemented without the active and informed involvement of physicians.”



Greg Holthusen, M.D.
“. . . maximize the value of health care expenditures through the joint efforts of business, physicians, hospitals, and the community without reducing the quality of care. . . .”

- Patients, most of whose medical costs are paid by government or insurance, have not been made sufficiently aware of the problem.
- Insurance companies, able to increase charges to keep up with pay-out, have not been active enough.
- The hospital industry, with complex government regulations, higher costs for technology and energy, rising utilization of services, and salary increases, has suffered much from inflation. Not wanting to cut services and being reimbursed according to cost, hospitals have not been able to improve efficiency in cost effectiveness.
- Government, attempting to solve all the problems with limited resources, has fueled inflation by improper regulation and inappropriate spending.

This is not to say that the wheels are not turning. Physicians, business, hospitals, and government are working to find alternatives, and, indeed, some solutions are already apparent.

One example, as reported by Greg Holthusen, M.D., is a physician-business-hospital coalition in Winston-Salem. The Medical Society, through its Health Planning Committee, of which Holthusen is chairperson, initiated the coalition in May 1981. “Efficiency and accountability are integral to the makeup and success of [business]. Unlike the federal government, business can move quickly to deal with what they perceive as an economic drain,” Holthusen explained. Its members now include representatives of six corporations, three hospital administrators, and three members of the Medical Society representing both the medical school and the private community. “To maximize the value of health care expenditures through the joint efforts of business, physicians, hospitals, and the community without reducing the quality of care” is the coalition’s statement of intent.

Having developed a list of strategies and priorities,

the group began with the promoting of outpatient surgery which involved patient and employee education, physician education, and health coverage changes. All are enthusiastic about the program; others underway include:

- Promotion of other outpatient services — e.g., preadmission testing
- Employee wellness programs
- A common disability back-to-work form which would be utilized by and accepted by all companies and more easily filled out by physicians
- A study of emergency room use at both Forsyth and North Carolina Baptist Hospitals, specifically addressing the question of whether patients actually need to come to the emergency room or could have gone to a doctor's office
- The promotion of cost containment through peer review, specifically endorsing the contracting for private peer review on hospitalized company employees with Piedmont Medical Foundation
- The planning of a health supplement for publication in Winston-Salem newspapers in which these and other health issues can be brought before the public
- Discussion of present and projected hospital and nursing home bed needs in the area

Another example of cost containment measures in use today can be found within the hospital industry itself. Citing the fact that "... hospital management [is] making adjustments in planning so as to contain costs as much as possible within the scope of the inflationary economy we are now experiencing . . ." Earl Tyndall, Jr., of Medical Park Hospital discussed several methods, among them:

- Non-duplication of services within a given geographic area — e.g., technological and clinical services
- Joint purchasing or shared purchasing — e.g.,



Representative Dennis Wicker

"In a day and time in which you are trying to keep people out of the hospital and encourage outpatient surgery, it made little sense to me to bring yet another group of providers into the hospital setting."

bids are submitted to a group of hospitals rather than one hospital

- Energy conservation — e.g., more efficient apparatus
- Public awareness — e.g., hospitals that are members of the Voluntary Effort routinely provide physicians with a patient's bill, including charges for particular items
- Marketing of services to other hospitals or industry
- Mergers of hospitals — e.g., acquisition mergers or consortiums which reduce risk and administrative and technological costs

Representative Dennis Wicker (D-Lee) offered state government's point of view and showed his concern that many legislators, ignoring the high cost of technology, would require the best in health care — and therefore its tools — while wanting to slow the rate of cost. This basic inconsistency aside, state government has enacted some laws to stimulate cost containment: enabling legislation for the operation of HMOs and IPAs, a generic drug substitution law, and ancillary provider practice acts which do not unnecessarily expand the scope of the practices. In reference to efforts to mandate hospital staff privileges for podiatrists Wicker offered, "In a day and time in which you are trying to keep people out of the hospital and encourage outpatient surgery, it made little sense to me to bring yet another group of providers into the hospital setting."

While expressing grave doubts about the concept of a hospital rate commission, Wicker warned the audience that such was not a dead issue in North Carolina. Other possibilities that the General Assembly could consider include further legislation to stimulate the growth of HMOs and IPAs (e.g., low cost loans to groups starting such programs, the establishment of a foundation to attract private capital) and a mandatory drug substitution law.



Earl Tyndall

"... hospital management [is] making adjustments in planning so as to contain costs . . ."



Sarah T. Morrow, M.D., M.P.H.
 "How do we continue to respond to the needs of North Carolina's citizens? How much is society willing to pay?"

Photos by April Hart

Governmental pressure to slow the growth of health related expenditures is found at both the state and federal levels. Sarah T. Morrow, M.D., M.P.H., Secretary of North Carolina's Department of Human Resources, discussed the impact of President Reagan's proposed "New Federalism" upon our state, saying that, while she supported the principles guiding "Reaganomics," the "... fairness and practicality of the proposed financing and its impact on the overall human service system in North Carolina..." must be examined closely.

Some of the federal proposals are:

- The exchange of the Medicaid and Aid to Families with Dependent Children (AFDC) programs: The federal government will pay the full cost of Medicaid, and the state, of AFDC, which will cost North Carolina \$193 million
- Turning back to the states the control and financing of 43 other programs, which will cost North Carolina \$190 million

- Reduction of federal funding of HSAs
- State governments being asked to pick up 25% of the cost of PSROs
- Block grants of federal monies for particular programs, most of which will experience cut-backs (North Carolina is already working on those that have come to the state.)

The effect of these proposals is to place the burden of answering the questions, in Morrow's words, "How do we continue to respond to the needs of North Carolina citizens?" and "How much is society willing to pay?" Given the state's very limited resources, efforts must be made to reduce the number of available services or the number of people served. In the past North Carolina has been more generous in the number of optional services provided while more conservative as to the number of people served. The Department of Human Resources is looked to for help in defining whose need is the greatest and how to best respond to those needs.

Morrow called upon physicians to continue to work with government in providing care for the poor (in particular, primary care and prevention services). Citing the need to reduce federal intrusion and standardization, she called upon hospitals to continue to make the Voluntary Effort work.

The many causes of rising health care costs involve us all. We must all become involved in slowing the trend.

A.A.H.

REGARDING CONTRIBUTIONS

On page 431 of this issue you will find a "filler" submitted to the *Journal* by J. Ross Shuping, M.D., of Greenville, North Carolina. We do select this copy and therefore solicit such contributions from readers and members. Any subject matter, any bit of information (a favorite recipe?) that you would like to share is welcome. (Please note, however, copyright limitations if they apply.)

A.A.H.

JOHN ABERNETHY [1764-1831]

There is no short cut, nor "royal road," to the attainment of medical knowledge. The path which we have to pursue is long, difficult, and unsafe. In our progress, we must frequently take up our abode with death and corruption; we must adopt loathsome diseases for our familiar associates, or we shall never be thoroughly acquainted with their nature and dispositions; we must risk, may even injure, our own health in order to be able to preserve or restore that of others.

Hunterian Oration, 1819

Bulletin Board

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Howell, Edgar Vaston, Jr., (ORS) 400 E. Washington Street, P.O. Box 1148, Rockingham 28379

WAYNE

Brubeck, Ellen Temple, (FP) 238 Smith Chapel Road, Mount Olive 28365

Credit: 25 hours

Info: Donald R. Kirks, M.D., Program Director, Department of Radiology — Box 3834, Duke University Medical Center, Durham, NC 27710

August 28-29

"Dermatology for the Non-Dermatologist"

Place: Boone

Fee: \$75

Credit: 7 hours (AAFP applied for)

Info: W. B. Wood, M.D., Director CME, 231 MacNider 202H, UNC School of Medicine, Chapel Hill, NC 27514, 919-962-2118

September 8

"Cancer Day 1982"

Place: Greenville

Fee: \$50

Credit: 6 hours (AAFP applied for)

Info: Edwin W. Monroe, M.D., PO Box 7224, Greenville, NC 27834, 919-758-5200

September 10-11

"Intraocular Lens Implantation Workshop"

Place: Chapel Hill

Fee: \$50

Credit: 16 hours

Info: W. B. Wood, M.D., Director CME, 231 MacNider 202H, UNC School of Medicine, Chapel Hill, NC 27514, 919-962-2118

September 12-16

"Family Medicine Review"

Place: Winston-Salem

Fee: \$345

Credit: 40 hours

Info: Emery C. Miller, M.D., Associate Dean of Continuing Education, Bowman Gray School of Medicine, 300 South Hawthorne Road, Winston-Salem, NC 27103, 919-748-4450

September 23-26

"Urologic Malignancies"

Place: Pinehurst

Credit: 16 hours

Info: Linda Mace, Assembly Secretary, Box 3707, Duke Hospital, Durham, NC 27710

September 24

"Fourth Annual Health Law Forum"

Place: Greenville

Fee: \$100

Credit: 7 hours (AAFP applied for)

Info: Edwin W. Monroe, M.D., PO Box 7224, Greenville, NC 27834, 919-758-5200

September 28

"The Role of Physician and Minister in Patient Care"

Place: Greenville

Fee: \$25

Credit: 3 hours (AAFP applied for)

Info: Edwin W. Monroe, M.D., PO Box 7224, Greenville, NC 27834, 919-758-5200

Out-of-State-Southeastern Region

July 7-10

"Cardiology 1982: A Comprehensive Review of the Latest Techniques and Developments in the Field of Cardiology for the Practicing Cardiologist/Internist"

Place: Knoxville, Tennessee

Info: Extramural Programs Dept., American College of Cardiology, 911 Old Georgetown Road, Bethesda, MD 20014

July 12-14

"Clinical Gastroenterology"

Place: Hilton Head, South Carolina

Fee: \$200

Credit: 12 hours

Info: Emery C. Miller, M.D., Associate Dean of Continuing Education, Bowman Gray School of Medicine, 300 South Hawthorne Road, Winston-Salem, NC 27103, 919-748-4450

What? When? Where?

Please note: 1. The Continuing Medical Education Programs at Bowman Gray, Duke, East Carolina and UNC Schools of Medicine, Dorothea Dix, and Burroughs Wellcome Company are accredited by the American Medical Association. Therefore CME programs sponsored or cosponsored by these schools automatically qualify for AMA Category I credit toward the AMA's Physician Recognition Award, and for North Carolina Medical Society Category A credit. Where AAFP credit has been requested or obtained, this also is indicated. 2. The "place" and "sponsor" are indicated for a program only when these differ from the place and source to write "for information."

In-State

July 8-10

"Fourth Annual Mountain Meeting"

Place: Asheville

Fee: \$125

Credit: 12 hours

Info: Emery C. Miller, M.D., Associate Dean of Continuing Education, Bowman Gray School of Medicine, 300 South Hawthorne Road, Winston-Salem, NC 27103, 919-748-4450

July 16-18

"Psychological Aspects of Lung Disease"

Place: Black Mountain

Info: Judith Carter, Office of Continuing Education, UNC-CH, School of Public Health 251H, Chapel Hill, NC 27514, 919-966-4032

July 17-18

"Dermatology for the Non-Dermatologist"

Place: Boone

Fee: \$75

Credit: 7 hours (AAFP applied for)

Info: W. B. Wood, M.D., Director CME, 231 MacNider 202H, UNC School of Medicine, Chapel Hill, NC 27514, 919-962-2118

July 19-23

"Southern OB-GYN Seminar"

Place: Asheville

Info: W. Otis Duck, M.D., Drawer F, Mars Hill, NC 28754

July 26-30

"Diagnostic Imaging Postgraduate Course"

Place: Atlantic Beach

Fee: \$375 (\$200 if in training)

July 27-31

"Fifth Annual Symposium on Contemporary Clinical Neurology"
Place: Hilton Head Island, South Carolina
Info: Mrs. Joan Sullivan, Dept. of Neurology, Vanderbilt University School of Medicine, Nashville, TN 37212

August 2-7

"Tenth Annual Beach Workshop"
Place: Myrtle Beach, South Carolina
Fee: \$175
Credit: 20 hours
Info: Emery C. Miller, M.D., Associate Dean of Continuing Education, Bowman Gray School of Medicine, 300 South Hawthorne Road, Winston-Salem, NC 27103, 919-748-4450

August 5-7

"The 4th Annual MCV Pediatric Primary Care Conference: Pediatrics at the Beach"
Place: Virginia Beach, Virginia
Info: Kathy E. Johnson, Box 48, MCV Station, Richmond, VA 23298, 804-786-0494

August 13-14

"EKG Interpretation and Arrhythmia Management"
Place: Nashville, Tennessee
Fee: \$245
Credit: 13 hours, Category 1; 13 hours, AAFP
Info: IMEC, Division of Postgraduate Education, 64 Inverness Drive East, Englewood, Colo 80112, 800-525-8651

The items listed in the above column are for the three months immediately following the month of publication. Requests for listing should be received by "WHAT? WHEN? WHERE?", P.O. Box 27167, Raleigh, 27611, two months prior to the month in which they are to appear. A "request for listing" form is available upon request.

North Carolina Medical Society Auxiliary

LIFE BEYOND RESIDENCY

Since June is the month when many physicians complete years of training and enter medical practice, the Forsyth-Stokes-Davie Medical Auxiliary sponsored this spring a meeting of spouses of "graduating" residents. Those who attended exemplified the diversity of medical families who will be moving into communities all over the country. Some were newlyweds, others had pre-teen children; they spanned a decade in ages; some chose to be at home, others were involved in careers; most knew where they would be moving; a few were still not sure.

We "old-timers" related our personal experiences as members of the American Medical Association Auxiliary over the years, and I learned that we too have a variety of backgrounds and interests. As our county auxiliary president described activities sponsored by physicians' wives in the past and present, it became obvious that despite the heterogeneous backgrounds of auxiliary members we had banded together in this organization and had found support both in our personal and public lives.

(continued on page 450)

CYCLAPEN-W (cyclicalin)

Indications

Cyclapen has less *in vitro* activity than other drugs in the ampicillin class and its use should be confined to these indications. Treatment of the following infections:

RESPIRATORY TRACT

Tonsillitis and pharyngitis caused by Group A beta-hemolytic streptococci
Bronchitis and pneumonia caused by *S. pneumoniae* (formerly *D. pneumoniae*)
Otitis media caused by *S. pneumoniae* (formerly *D. pneumoniae*) and *H. influenzae*
Acute exacerbation of chronic bronchitis caused by *H. influenzae*
*Though clinical improvement has been shown, bacteriologic cures cannot be expected in all patients with chronic respiratory disease due to *H. influenzae*.

SKIN AND SKIN STRUCTURES (integumentary) infections caused by Group A beta-hemolytic streptococci and staphylococci, non-penicillinase producers.

URINARY TRACT INFECTIONS caused by *E. coli* and *P. mirabilis*. (This drug should not be used in any *E. coli* and *P. mirabilis* infections other than urinary tract.)

NOTE: Perform cultures and susceptibility tests initially and during treatment to monitor effectiveness of therapy and susceptibility of bacteria. Therapy may be instituted prior to results of sensitivity testing.

Contraindications: Contraindicated in individuals with history of an allergic reaction to penicillins.

Warnings: Cyclapen should only be prescribed for the indications listed herein.

Cyclapen has less *in vitro* activity than other drugs of the ampicillin class. However, clinical trials demonstrated it is efficacious for recommended indications.

Serious and occasional fatal hypersensitivity (anaphylactoid) reactions have been reported in patients on penicillin. Although anaphylaxis is more frequent following parenteral use, it has occurred in patients on oral penicillins. These reactions are more apt to occur in individuals with history of sensitivity to multiple allergens. There are reports of patients with history of penicillin hypersensitivity reactions who experienced severe hypersensitivity reactions when treated with a cephalosporin. Before penicillin therapy, carefully inquire about previous hypersensitivity reactions to penicillins, cephalosporins and other allergens. If allergic reaction occurs, discontinue drug and initiate appropriate therapy. Serious anaphylactoid reactions require immediate emergency treatment with epinephrine. Oxygen, I.V. steroids, airway management, including intubation, should also be administered as indicated.

Precautions: Prolonged use of antibiotics may promote overgrowth of nonsusceptible organisms. If superinfection occurs, take appropriate measures.

PREGNANCY: Pregnancy Category B. Reproduction studies performed in mice and rats at doses up to 10 times the human dose revealed no evidence of impaired fertility or harm to the fetus due to cyclapen. There are, however, no adequate and well-controlled studies in pregnant women. Because animal reproduction studies are not always predictive of human response, use this drug during pregnancy only if clearly needed.

NURSING MOTHERS: It is not known whether this drug is excreted in human milk. Because many drugs are, exercise caution when cyclapen is given to a nursing woman.

Adverse Reactions: Oral cyclapen is generally well tolerated. As with other penicillins, untoward sensitivity reactions are likely, particularly in those who previously demonstrated penicillin hypersensitivity or with history of allergy, asthma, hay fever, or urticaria. Adverse reactions reported with cyclapen: diarrhea (in approximately 1 out of 20 patients treated), nausea and vomiting (in approximately 1 in 50), and skin rash (in approximately 1 in 60). Isolated instances of headache, dizziness, abdominal pain, vaginitis, and urticaria have been reported. (See WARNINGS) Other less frequent adverse reactions which may occur and are reported with other penicillins are anemia, thrombocytopenia, thrombocytopenic purpura, leukopenia, neutropenia and eosinophilia. These reactions are usually reversible on discontinuation of therapy.

As with other semisynthetic penicillins, SGOT elevations have been reported.

As with antibiotic therapy generally, continue treatment at least 48 to 72 hours after patient becomes asymptomatic or until bacterial eradication is evidenced. In Group A beta-hemolytic streptococcal infections, at least 10 days' treatment is recommended to guard against risk of rheumatic fever or glomerulonephritis. In chronic urinary tract infection, frequent bacteriologic and clinical appraisal is necessary during therapy and possibly for several months after. Persistent infection may require treatment for several weeks.

Cyclapen is not indicated in children under 2 months of age. Patients with Renal Failure: Cyclapen may be safely administered to patients with reduced renal function. Due to prolonged serum half-life, patients with various degrees of renal impairment may require change in dosage level (see DOSAGE AND ADMINISTRATION in package insert).

Dosage (Give in equally spaced doses)

INFECTION	ADULTS	CHILDREN*
Respiratory Tract		
Tonsillitis & Pharyngitis	250 mg q.i.d.	body weight < 20 kg (44 lbs) 125 mg q.i.d. body weight > 20 kg (44 lbs) 250 mg q.i.d.
Bronchitis and Pneumonia		
Mild or Moderate Infections	250 mg q.i.d.	50 mg/kg/day q.i.d.
Chronic Infections	500 mg q.i.d.	100 mg/kg/day q.i.d.
Otitis Media	250 mg to 500 mg q.i.d.†	50 to 100 mg/kg/day†
Skin & Skin Structures	250 mg to 500 mg q.i.d.†	50 to 100 mg/kg/day†
Urinary Tract	500 mg q.i.d.	100 mg/kg/day

*Dosage should not result in a dose higher than that for adults.
†depending on severity

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... in infants and children

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Cyclapen®-W produces a significantly lower incidence of the most common side effect, diarrhea.²

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*New t.i.d.
dosage for
otitis media
and strep
pharyngitis
in children*

*Rapidly excreted unchanged in urine. Clinical efficacy may not always correlate with blood levels.

†Due to susceptible organisms.

1. Ginsburg CM, McCracken GH Jr, Zweigheft JC, Clahsen JC. Comparative pharmacokinetics of cyclacillin and amoxicillin in infants and children. *Antimicrob. Ag. Chemother.*

19:1034-1038 (June) 1981.

2. Multicenter trials. Data to be published.

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See important information on adjoining column.

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Pharmaceuticals Division

As the evening progressed we found ourselves talking about the comfort we had felt in knowing other physicians' wives and realizing that we were all facing similar stresses — the frustration of going alone to a family picnic or arriving late for a surprise party. We discovered that as young wives our experiences were not unique but were common in medical families. We were sure that at auxiliary meetings we would not hear complaints about the high cost of medical care or the long wait to see a doctor. It was the one gathering where we could relax with others who understood the realities of medicine.

We hear and read much today about support for the family of the impaired physician. We must not forget to support the healthy medical family as well. Some of our graduating residents will be entering practice in North Carolina in July and August, and auxiliary membership chairmen and local physicians' spouses will warmly welcome the newcomers. I hope that the auxiliaries will identify themselves openly as a support group for these new medical families who are making a difficult transition from training to practice. Support is especially needed at this stage of the medical family's life cycle. Some physicians will be entering practice with large debts to be repaid. All will be anxious about their economic prospects in their chosen communities. Moving can create stress within even the most stable family. Having a supportive group of medical

families with whom to discuss expectations and fears can ease the strain.

Those county auxiliaries which have residency programs in their counties can offer a referral service for the departing residents — names can be sent to other state membership chairmen as well as the county membership chairmen within North Carolina. This gesture of caring as they leave will demonstrate concern for their future as well as give them an anticipation of welcome wherever they are moving. The personal support extended will pay dividends not only for the individual medical families but also for the future of medical care. Those medical families who feel supported by their colleagues will be better able to serve their chosen communities.

Anita D. Taylor
Winston-Salem, N.C.

News Notes

East Carolina University School of Medicine

Two Department of Biochemistry faculty members published an article in the January issue of the *Journal of Applied Physiology*. The article, co-authored by associate professors G. Lynis Dohm, George J. Kasperk and former assistant professor of surgery Andre M. van Rij, is entitled "Increased Excretion of Urea and NT⁺ methylhistidine by Rats and Humans After a Bout of Exercise."

Dr. R. Stephen Porter, assistant professor of family medicine, and Dr. Gary I. Levine, instructor of family medicine, have received \$49,752 from Glaxo, Inc., to conduct "A Multicenter Randomized Study to Compare the Efficacy and Safety of Ceftazidime and Cefamandole in the Treatment of Lower Respiratory Tract and/or Systemic Bacterial Infections."

Health Sciences Library Director, Dr. Jo Ann Bell and Benjamin Fryser, medical librarian, have received committee appointments to the Medical Library Association.

Bell was appointed for a three-year term on the recertification committee and Fryser for a three-year term on the surgery and statistics committees.

Dr. Harold J. May, director of behavioral science for the Department of Family Medicine, published an article "SIDS Family Adjustment Scale: A Method of Assessing Family Adjustment to Sudden Infant Death

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Syndrome" in the March issue of *Omega: Journal of Death and Dying*.

May also presented a paper in March at the Society of Teachers of Family Medicine Conference held in Kansas City. May's presentation was "Family Interviewing Following the Death of a Child."

Dr. Dennis A. Revicki, research coordinator for the Department of Family Medicine, recently attended the meeting of the American Educational Research Association in New York. During the meeting Revicki presented "The Relationship Between Self-Concept and Achievement: An Investigation."

Dr. Theodore Kushnick, professor of pediatrics and director of the Developmental Evaluation Clinic, collaborated with New Jersey Medical School physician, Bernard Adler, on an article appearing in the January issue of *Pediatrics*. The article is entitled "Genetic Counseling in Prenatally Diagnosed Trisomy 18 and 21: Psychosocial Aspects."

Dr. Donald R. Hoffman, associate professor of

pathology and laboratory medicine, published two articles appearing in the February issue of *Annals of Allergy*. The articles are "Allergens in Hymenoptera Venom. IX. Species Specificity to Polistes (Paper Wasp) Venoms" and "Allergens in Hymenoptera Venoms. VIII. Immunologic Comparison of Venoms from Six Species of *Vespula* (Yellow Jackets)."

Chris A. McDonald, research assistant, collaborated with Hoffman on the articles.

Dr. Richard S. Marx, assistant professor of medicine, attended the regional meeting of the American College of Physicians held in Winston-Salem. During the meeting, Marx presented a "Clinical Approach to Lymphadenopathy and Fever."

Dr. Linda Z. Nieman, assistant director of the School of Medicine's Center for Medical Education and Evaluation, attended the February meeting of the Eastern Educational Research Association where she presented the paper, "Assessing Individual Differences in Stereotypes of Women."



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Two School of Medicine faculty members recently collaborated with faculty from East Carolina University's School of Allied Health on an article which appears in the January-February issue of *Annals of Otolaryngology, Rhinology and Laryngology*.

Dr. Jack E. Brinn Jr., associate professor of anatomy, and Dr. Robert S. Fulghum, associate professor of microbiology, co-authored "Comparative Anatomy of Eustachian Tube and Middle Ear Cavity in Animal Models for Otitis Media" with Dr. Hal J. Daniel III and Kathryn A. Barrett.

Support for the research was provided in part by Sigma XI, East Carolina University Research Council, N.C. United Way, and the Deafness Research Foundation.

In addition, Fulghum and Brinn traveled to the 82nd Annual Meeting of the American Society for Microbiology in March that was held in Atlanta. They presented a slide session entitled "Induced Otitis Media in Chinchillas and Gerbils."

Dr. Robert E. Thurber, professor and chairman of the Department of Physiology, has been appointed to the American Heart Association's Committee on Re-

gional/National Research. Thurber also was elected chairman of the Middle Atlantic Research Certification Committee.

Dr. Alvin Volkman, professor of pathology and laboratory medicine, authored "Resident Macrophage Proliferation in Mice Depleted of Blood Monocytes by Strontium-89." The article appears in the February issue of *Laboratory Investigations*.

Dr. Jarrett Barnhill, Jr. assistant professor of psychiatric medicine, was a visiting professor during March for the Department of Neuropsychiatry and Behavioral Science at the University of South Carolina School of Medicine. Barnhill presented "Recognition and Treatment of Depression in Office Practice" while he was in Columbia.

Dr. Loretta Kopelman, associate professor of pediatrics and director of humanities, has been named
(continued on page 454)

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Tega-Cort Forté and **Tega-Cort** lotions are offered in a nice smooth non-staining water soluble base.

Indications: For relief of the inflammatory manifestations of corticosteroid responsive dermatoses including Poison Ivy, and sunburn.

Contraindications: Topical steroids have not been reported to have an adverse effect on pregnancy, the safety of their use in pregnant females has not absolutely been established. Therefore, they should not be used extensively on pregnant patients, or in large amounts, or for prolonged periods of time.

Dosage and Administration: Apply to affected area 3 or 4 times daily as directed by your physician.

Caution: Federal law prohibits dispensing without prescription. For external use only. Store in a cool place but do not freeze.

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VA Study¹

- 450 patients studied
- Mild to moderate hypertensives
- Comparison of propranolol and reserpine for Step-2 antihypertensive therapy
- **Conclusion:** when added to a thiazide diuretic, reserpine was effective in a larger percentage of patients (88%) than was propranolol (61%)!

HDFP Study²

- More than 10,000 patients studied
- Conducted at 14 centers over 5 years
- Proved that compliance with Step Care lowers death rate from all cardiovascular causes
- **Conclusion:** reserpine-thiazide regimens were preferred for Step-2 therapy, and were deemed effective, without significant adverse effects!

MRFIT Study³

- 6-year, 12,000-patient study, to be completed in 1982
- Assesses factors that may increase risk of cardiovascular disease
- Preferred Step-2 regimen: reserpine-thiazide
- **Full year's data:** reserpine is causing less depression than methyldopa, diuretics, or placebo!

That's why the combination in

Salutensin[®]

(hydroflumethiazide 50 mg/
reserpine 0.125 mg)

Is the preferred Step-2 regimen

Salutensin®
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(hydroflumethiazide 25 mg/reserpine 0.125 mg)

Brief Summary of Prescribing Information (12) 10/27/78
For complete information consult Official Package Circular

WARNING

This fixed combination drug is not indicated for initial therapy of hypertension. Hypertension requires therapy titrated to the individual patient. If the fixed combination represents the dosage so determined, its use may be more convenient in patient management. The treatment of hypertension is not static, but must be reevaluated as conditions in each patient warrant.

CONTRAINDICATIONS

Anuria, oliguria, active peptic ulceration, ulcerative colitis, severe depression or hypersensitivity to its components contraindicates the use of Salutensin.

WARNINGS

Small-bowel lesions (obstruction, hemorrhage, perforation and death) have occurred during therapy with enteric-coated formulations containing potassium, with or without thiazides. Such potassium formulations should be used with Salutensin only when indicated and should be discontinued immediately if abdominal pain, distention, nausea, vomiting or gastrointestinal bleeding occurs. Use cautiously, and only when deemed essential, in fertile, pregnant or lactating patients.

Use in Pregnancy—Thiazides cross the placenta and can cause fetal or neonatal hyperbilirubinemia, thrombocytopenia, altered carbohydrate metabolism and possibly electrolyte disturbances. Fatal reactions may occur with reserpine during electroshock therapy; discontinue Salutensin 2 weeks before such therapy. Increased respiratory secretions, nasal congestion, cyanosis and anorexia may occur in infants born to reserpine-treated mothers.

PRECAUTIONS

Azotemia, hypochloremia, hyponatremia, hypochloremic alkalosis and hypokalemia (especially with hepatic cirrhosis and corticosteroid therapy) may occur, particularly with pre-existing vomiting and diarrhea. Potassium loss may cause digitalis intoxication. *Potassium loss responds to potassium-rich foods, potassium chloride or, if necessary, discontinuation of therapy.* Serum ammonia elevation may precipitate coma in precomatose hepatic cirrhotics. Discontinue therapy 2 weeks before surgery or if myocardial irritability, progressive azotemia or severe depression occur. Exercise caution in patients with chronic uremia, angina pectoris, coronary thrombosis or extensive cerebral vascular disease or bronchial asthma and in those with a history of peptic ulceration or bronchial asthma; in post-sympathectomy patients; in patients on quinidine; and in patients with gallstones, in whom biliary colic may occur. Patients who have diabetes mellitus or who are suspected of being prediabetic should be kept under close observation if treated with this agent.

ADVERSE REACTIONS

Hydroflumethiazide—Skin-rashes (including exfoliative dermatitis), skin photosensitivity, urticaria, necrotizing angitis, xanthopsia, granulocytopenia, aplastic anemia, orthostatic hypotension (potentiated with alcohol, barbiturates or narcotics), allergic glomerulonephritis, acute pancreatitis, liver involvement (intrahepatic cholestatic jaundice), purpura plus or minus thrombocytopenia, hyperuricemia, hyperglycemia, glycosuria, malaise, weakness, dizziness, fatigue, paresthesias, muscle cramps, skin rash, epigastric distress, vomiting, diarrhea and constipation.

Reserpine—Depression, peptic ulceration, diarrhea, Parkinsonism, nasal stuffiness, dryness of the mouth, weight gain, impotence or decreased libido, conjunctival injection, dull sensorium, deafness, glaucoma, uveitis, optic atrophy, and, with overdosage, agitation, insomnia and nightmares.

USUAL DOSE

The usual adult dose of Salutensin is one tablet once or twice daily. If a smaller amount of thiazide diuretic is desired, Salutensin-Demi, one tablet once or twice daily can be given.

SUPPLIED

Bottles of 10 and 1000 scored tablets.

REFERENCES

1. Propanolol in the treatment of essential hypertension. Veterans Administration Cooperative Study Group on Antihypertensive Agents. *JAMA* 237:2303-2310, 1977.
2. Five-year findings of the hypertension detection and follow-up program: I. Reduction in mortality of persons with high blood pressure, including mild hypertension. Hypertension Detection and Follow-up Program Cooperative Group. *JAMA* 242:2562-2571, 1979.
3. Moser M, Kaplan NM, Sullivan JM, Paul O, in discussion: Perspectives on MRFIT: Can the interim data be applied to your practice...? An Interim Report on the Ongoing Multiple Risk Factor Intervention Trial: MRFIT. *New Perspectives on Hypertension* 2(1):10-19, February 1981.

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News Notes

(continued from page 452)

as a consultant to the National Endowment for the Humanities.

Dr. Jarlath M. MacKenna, assistant professor of obstetrics and gynecology, was a guest speaker at the N.C. Chapter of the American College of Obstetrics and Gynecology Junior Fellow meeting held at Duke University.

MacKenna's topic for discussion was "Radical Management of Premature Ruptured Membranes."

He also was a guest speaker at the March of Dimes Perinatal Symposium held March 18 in Greenville. MacKenna presented "Hypertensive States of Pregnancy" during the symposium.

Dr. James G. Jones, professor and chairman of the Department of Family Medicine, received a grant of \$74,356 during March from the Public Health Service to support general practice dental residency training.

Other School of Medicine grants received in March include: Dr. Harold J. May and Dennis A. Revicki, Department of Family Medicine, "Validation of the Physician Burnout Checklist in Two Samples of Family Physicians," \$2,548 from Family Health Foundation of America; Ben Weaver, associate dean, "Arthritis Community Outreach Program," \$15,000 from N.C. Department of Human Resources.

Dr. Sam N. Pennington, professor of biochemistry, was a visiting scientist for the Federation of American Societies for Experimental Biology at Elizabeth City State University February 24-25. Pennington conducted two seminars entitled "Role of Prostaglandins in Chronic Alcoholism" and "Molecular Mechanism of Fetal Alcohol Syndrome."

University of N.C. School of Medicine And N.C. Memorial Hospital

A scholarship in the School of Medicine has been established to honor Dr. Thomas Collum Butler, and the tribute is two-fold. Not only is the scholarship named for Butler, but also it will provide annual support for a student in the M.D.-Ph.D. program, a track Butler has long advocated for physician scientists.

The establishment of the Butler Scholarship was announced by Dr. Stuart Bondurant, dean of the School of Medicine, who said the initiative for honoring Butler in this manner came from Butler's colleagues in the Department of Pharmacology.

Butler is professor of pharmacology emeritus. He chaired the Department of Pharmacology from 1950, when he was appointed to the faculty, until 1963.

Butler received A.B. and M.D. degrees from Van-

derbilt University in 1930 and 1934, respectively. He served on the faculty there and at The Johns Hopkins University before joining the faculty of the University of North Carolina at Chapel Hill in 1950. He officially retired from the UNC-CH faculty in 1980.

Butler's pioneering research in pharmacology led to, as one former student puts it, "an avalanche of studies" by other scientists.

The first Butler Scholarship will be awarded next fall to a student who has been accepted to medical school and is interested in the M.D.-Ph.D. program. The student may select any basic science department or curriculum for graduate studies.

The level of support will be comparable to the Morehead Fellowship, and the Butler Scholarship also will support medical studies.

The Arthritis Foundation recently granted investigator awards to Dr. Simon L. Newman and Dr. Philip Cohen, both members of the division of rheumatology and immunology, Department of Medicine. The grants, which total \$53,500, become effective July 1 and will be used to further arthritis research.

Newman, research assistant professor of medicine, is studying how certain cells called macrophages recognize foreign invaders, such as bacteria, viruses and tumor cells, and destroy them.

Cohen, assistant professor of medicine, is researching the cause of systemic lupus, an arthritic condition common among young women which can lead to injury of kidneys, skin, the central nervous system and other parts of the body.

Cohen's five-year senior investigator is the second awarded in two years to the division of rheumatology and immunology.

Dr. John Winfield, professor of medicine and division chief, said that only one or two senior investigator awards are given annually. "These awards recognize the researchers' excellence and potential as investigators in immunology," Winfield said. "Providing financial support over a five-year period enables both men to devote their time to research." Winfield added that Newman's two-year investigator award was a new award which was given to eight researchers across the country.

The appointment of Dr. William Droegemueller as professor and chairman of the School of Medicine's Department of Obstetrics and Gynecology has been announced by Chancellor Christopher C. Fordham III.

Droegemueller's appointment, effective March 1, is for a five-year term as department chairman.

Droegemueller, a Chicago native, had been professor and associate head of the Department of Obstetrics and Gynecology at the Arizona Health Sciences Center in Tucson since 1977. He taught at the University of Colorado Medical Center in Denver from

1965-77 and was vice chairman of the center for one year.

A specialist in gynecological surgery, Droegemueller has done research in population control and the complications involved in different methods of contraception. He recently published articles on a new vaginal contraceptive, ectopic pregnancy, surgical contraception and complications involving intra-uterine devices.

Droegemueller received his B.A. degree in 1956 and his M.D. in 1960 from the University of Colorado in Denver.

Physicians at the University of North Carolina at Chapel Hill have begun clinical trials of a drug that may be the most effective treatment yet for sickle cell disease, the hereditary and sometimes excruciating illness that is most common among black people.

The UNC-CH scientists are joining with researchers in California, New York and Mobile, Ala., to evaluate cetiedil, a compound first synthesized in France 20 years ago.

"This is something we're very excited about," said Dr. Eugene P. Orringer, associate professor of medicine and principal investigator for the project.

"We're testing the ability of cetiedil to shorten the acute painful crises of sickle cell disease once they have begun, then we will test its ability to prevent them."

Cetiedil, Orringer explained, was developed originally as a smooth muscle relaxant to improve circulation to the legs of patients with hardening of the arteries. Because of its success and its additional properties as a local anesthetic, French physicians speculated that it also might help to curb the intense bouts of pain that sickle cell victims experience periodically.

"Although no controlled studies were carried out, initial reports that came primarily from West Africa claimed that the drug was extremely effective," he said.

By May, Orringer, Dr. Lee R. Berkowitz, a fellow in hematology, and Sue Sparrow, coordinator of the UNC Sickle Cell Program, hope to recruit 25 patients who are age 19 or older. Whenever possible, the physicians will interview each individual before a crisis begins so that they can explain the study clearly.

When a crisis does occur, a patient will contact one of the physicians or go immediately to the Emergency Room at North Carolina Memorial Hospital, Orringer said. He or she will be admitted to the hospital's Clinical Research Unit and receive free all of the standard treatment for sickle cell disease including oxygen, intravenous fluids and appropriate painkillers.

In addition, the patients will be given either cetiedil or an identical volume of an inactive solution. The study is "double-blind" in that neither the patients nor the doctors will know who received the active drug until after the study has been completed.

Charles B. Watson, M.D., Fred J. Spielman, M.D., Scott Sharpiro, M.D., Edwin A. Bowe, M.D., and E. F. Klein, M.D., anesthesiology, attended the 35th post-graduate assembly of anesthesiologists in New York, "Best Educational Exhibit." Their display was on "New Anesthetic Uses for the Pediatric Fiberoptic Bronchoscope," December, 1981.

Barney Leveau, M.D., associate professor of physical therapy, participated in a meeting of the associate editors of *Physical Therapy Magazine* Jan. 27-29 in Washington, D.C. sponsored by the American Physical Therapy Association.

Carolyn S. Schroeder, Ph.D., associate professor of psychology, was a visiting professor in the clinical psychology program at Bowling Green State University, Feb. 1-5 in Ohio.

Eric Schopler, M.D., professor of psychology and director of the Division TEACCH, gave a workshop for mental health and human service professionals on developmental therapy for autistic children, sponsored by the professional education division of the

Convalescent Hospital for Children, Feb. 11 in Rochester, N.Y.

Arthur J. Prange Jr., M.D., professor of psychiatry presented Grand Rounds at the Medical College of Virginia, titled "Adventures in the Thyroid Axis: Their Relevance for Affective Disorders," on Feb. 12. Prange also conducted Grand Rounds at Beth Israel Medical Center, and the St. Luke's-Roosevelt Medical Center in New York on Feb. 16-17; his subject was "Neurotensin: A Brain Peptide with Neuroleptic Properties."

Charles R. Hackenbrock, M.D., professor and chairman of anatomy, spoke at a special workshop on lipid protein interactions at the annual meetings of the Biophysical Society Feb. 14-17 in Boston, Mass.

James N. Hayward, M.D., H. Houston Merritt Distinguished professor and chairman of neurology, spoke at the Gordon Research Conference Feb. 8-12 in Ventura, Calif., and at the Feb. 17 meeting of the N.C. Society for Neuroscience, of which he is president-elect.

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Richard Cumming, postdoctoral fellow in the neurobiology research program, assumed the position of neurobiologist in the laboratory of biological ultrastructure at the National Institute for Medical Research March 1 in Mill Hill, London.

Herman P. Lineberger, M.D., assistant professor of psychiatry and child psychiatry training director participated in a panel presentation on the management of chronic pain problems in hemophiliacs at a joint meeting of The National Hemophilia Foundation and the American Psychosomatic Society in Denver, March 24. Lineberger's paper, titled "Social Characteristics of a Hemophilia Clinic Population, A Survey and Literature Review" was published in the journal, *General Hospital Psychiatry* late last year.

Keith Burrige, Ph.D., assistant professor of anatomy, was an invited speaker to present a seminar titled "Molecular Biology of Cell Locomotion" for the Imperial Cancer Research Fund sponsored by the Royal Society of London, March 24-25.

Daniel L. Dolan, M.D., director of continuing medical education at the Mountain Area Health Education Center, has been elected president of the North Carolina Chapter of the American College of Physicians. This election recently took place at the annual meeting of the chapter held in Winston-Salem.

Herbert S. Harned Jr., M.D., is professor of pediatrics, chief, division of pediatric cardiology; his patient care includes diagnostic cardiac catheterization studies, peri-surgical care and outpatient care. The division holds 80 clinics yearly outside clinic hospital and a weekly clinic within the hospital. Thirty-six of the outside clinics are reached by airplane flights. The new programs are a development of an adolescent cardiac clinic and the outreach cardiac clinic at Moses Cone Hospital.

Stephen C. Chaney, Ph.D., assistant professor of biochemistry and nutrition, just returned from a sabbatical leave at the University of California at Davis. Working in Dr. John Hershey's laboratory, he studied the purification and use of human protein synthesis initiation factors which play a vital role in the growth of living cells. He also studied the susceptibility of these in the growth of the living cells; key enzymes to various anticancer drugs. It is hoped that these experiments may provide the basis for the design of more effective cancer treatment.

Bowman Gray School of Medicine Wake Forest University

A biochemist at the Bowman Gray School of Medicine has developed a potential weapon against cancer of the ovary.

Dr. George J. Doellgast has created hybrid cells with the ability to produce antibodies specifically against ovarian cancer.

He created the hybrids by fusing myeloma cells with cells from mouse spleens. The resulting cells are called hybridomas and are capable of producing large amounts of monoclonal antibodies.

Central to Doellgast's technique is an enzyme he spent a decade of his career studying. Placental alkaline phosphatase (PAP) occurs in the human placenta and in some cancers, notably cancer of the ovary. He has shown that PAP makes those cancers vulnerable to monoclonal antibodies.

The PAP enzyme acts as a marker on the surface of ovarian cancer cells to make the cells a target for monoclonal antibodies.

Because they can be grown in great quantities in the laboratory, monoclonal antibodies against ovarian cancer theoretically could be injected into a patient in sufficient numbers to overwhelm a tumor.

The monoclonal antibodies also promise to be a means of delivering chemotherapeutic agents and radiation to a tumor. Such a use would spare normal cells from exposure to the drugs and radiation.

Despite the promise of what his research has uncovered, Doellgast cautions that much more testing remains to be done before the techniques ever can be used in human patients.

One of the most advanced systems ever developed for uncovering the causes of dizziness is now in use at North Carolina Baptist Hospital, Bowman Gray's principal teaching hospital.

According to Dr. Robert I. Kohut, professor and head of the Section on Otolaryngology, only the Air Force has a diagnostic system for dizziness as complete as the vestibular laboratory at Baptist Hospital.

Dizziness is thought to be second only to pain in the frequency of patient complaints. It can be a signal of a life threatening problem.

The vestibulo-ocular system provides more information about the balance system than was previously available because it permits study of the effects of rotation, posture change and stimuli which causes normal and rapid eye movement. Eye movement can be traced in the dark using infrared cameras.

Computerization within the new system permits computations which previously were prohibitively complicated.

The most comprehensive and current information about a rapidly evolving field of medicine is contained in a publication released by the Bowman Gray School of Medicine.

The publication, "Proceedings of an International Symposium on Nuclear Magnetic Resonance Imaging," was published by the school's Department of Radiology. The Bowman Gray editors are Dr. Richard L. Witkofski, professor of radiology, and Dr. Nolan Karstaedt, assistant professor of radiology. The third editor, Dr. C. Leon Partain, is associate professor of radiology at the Vanderbilt University School of Medicine.

Bowman Gray sponsored the three-day symposium on nuclear magnetic resonance (NMR) imaging along with Vanderbilt and the National Cancer Institute.

NMR imaging involves the use of magnetism and radio waves to obtain information about what is occurring within the body. It does not involve ionizing radiation. Computers used in NMR imaging translate a signal coming from the body into images of the body in cross section. Not only do the signals carry information about anatomy, but also they carry considerable information about the body's chemistry.

The new book from Bowman Gray provides a single source for learning about the theory of NMR imaging and for learning about how NMR imaging is being applied in such places as New York State, England and Scotland.

The American Cancer Society has awarded a three-year, \$162,000 grant to Bowman Gray for research aimed at a better understanding of the body's defense mechanisms against disease.

The research is headed by Dr. J. Wallace Parce, assistant professor of biochemistry.

Working with a particular strain of mice and with a virus known as VSV, Parce will be able to obtain the material needed to study the manner in which the body recognizes a foreign material such as a virus.

Parce anticipates that the work will provide a clearer understanding of how antigens and antibodies interact to allow the body to recognize something as being foreign.

The body's destructive mechanism which is part of Parce's research is the T-lymphocyte, a type of white blood cell.

While the work represents very basic research, the understanding gained from the work eventually may apply to such problems as cancer.

Bowman Gray has appointed three assistant professors and two instructors to its fulltime faculty.

The new assistant professors are Drs. John M. Lewis and Roger L. Royster of anesthesia, and Dr. Jan C. Updike in family medicine.

Those receiving appointments as instructor are Dr.

J. Bruce McLain, dentistry, and Dr. Steven R. Plunkett, radiology (radiation therapy).

Appointed to the clinical faculty are Dr. John R. Jacoway, clinical associate professor of pathology (oral pathology); Dr. Alvin S. Goodman, clinical assistant professor of dentistry (endodontics); Dr. Salvatore M. Pulverenti, clinical assistant professor of anesthesia; Drs. George J. Ellis Jr., James E. Ferguson II and Richard L. James, clinical instructors in obstetrics and gynecology; Dr. Kerry J. Gilliland, clinical instructor in medicine (cardiology); Dr. Christopher W. Groner, clinical instructor in family and community medicine; Dr. Clarence E. Lloyd, clinical instructor in radiology; and Dr. Stephen A. Yokeley, clinical instructor in dentistry.

Other appointments went to Dr. Deborah L. Best, associate in family and community medicine, and Robert C. Vaughn Jr., lecturer in medical jurisprudence.

Leon L. Rice Jr., a Winston-Salem attorney, has been re-elected chairman of the Medical Center Board of the Bowman Gray School of Medicine and North Carolina Baptist Hospital.

E. J. Prevatte of Southport was re-elected vice chairman, and Dr. Thomas D. Long of Roxboro was elected treasurer. Miss Katherine Davis, assistant to the medical center director, was re-elected secretary.

The board consists of six trustees of Wake Forest University, six trustees from Baptist Hospital and a member of the medical center's professional staff.

Newly appointed members of the board are Mrs. J. Frank Gilreath Jr. of Charlotte, Weston P. Hatfield of Winston-Salem, J. Robert Philpott of Lexington and Carlos Young of Shelby.

Charles M. Jones III, a third-year medical student at Bowman Gray, has been awarded the John R. McCain Student Fellowship of the South Atlantic Association of Obstetricians and Gynecologists. He received a \$600 student research grant and was selected to speak on his study, "The Effect of Labor on Maternal and Fetal Circulating Catecholamines," during the association's 44th annual meeting.

L. Ann Daniels, instructor in health education and director of allied/public health education for the Northwest AHEC, has been selected for a two-year term as a member-at-large of the executive board of the North Carolina Society for Public Health Education.

Patricia A. Gibson, instructor in pediatric neurology (social work), has been appointed to the Advisory committee of the National Information and Resource Center on Epilepsy.

(continued on page 461)

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The Physician's Sleep Glossary

Some common sleep laboratory terms

poly·som·no·graph. An instrument which simultaneously records by electrodes physiological variables during sleep—for example, brain activity (EEG), eye movements (EOG), muscle tonus (EMG) and other electrophysiological variables. These readings indicate precisely when patients fall asleep, how many wake periods they experience, the quality of sleep and the duration of sleep.

sleep la·ten·cy. The period of time measured from "lights out," or bedtime, to the commencement or onset of sleep.

wake time af·ter sleep on·set. Intervals of time spent awake between onset of sleep and the end of the sleep period. The polysomnograph registers the length and frequency of the intervals.

to·tal sleep time. The amount of time actually spent in sleeping. This is estimated by subtracting wake times from the period encompassed by the onset and the termination of sleep.¹

REM/NREM. 1. REM, or rapid eye movement, sleep is "active"—characterized by increased metabolic rates, elevated temperature and arousal-type EEG patterns. 2. NREM, or non-rapid eye movement, sleep represents "quiet" sleep stages. There are four distinct stages of NREM sleep.²

re·bound in·som·nia. A statistically significant worsening of sleep compared to baseline on the nights immediately following discontinuation of sleep medication.³

Efficacy objectively demonstrated in the sleep laboratory—the most valid environment for measuring hypnotic efficacy.

In numerous sleep laboratory investigations patients fell asleep sooner, slept longer and woke up less during the night³⁻¹² with

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Contraindications: Known hypersensitivity to flurazepam HCl; pregnancy. Benzodiazepines may cause fetal damage when administered during pregnancy. Several studies suggest an increased risk of congenital malformations associated with benzodiazepine use during the first trimester. Warn patients of the potential risks to the fetus should the possibility of becoming pregnant exist while receiving flurazepam. Instruct patient to discontinue drug prior to becoming pregnant. Consider the possibility of pregnancy prior to instituting therapy.

Warnings: Caution patients about possible combined effects with alcohol and other CNS depressants. An additive effect may occur if alcohol is consumed the day following use for nighttime sedation. This potential may exist for several days following discontinuation. Caution against hazardous occupations requiring complete mental alertness (e.g., operating machinery, driving). Potential impairment of performance of such activities may occur the day following ingestion. Not recommended for use in persons under 15 years of age. Though physical and psychological dependence have not been reported on recommended doses, abrupt discontinuation should be avoided with gradual tapering of dosage for those patients on medication for a prolonged period of time. Use caution in administering to addiction-prone individuals or those who might increase dosage.

Precautions: In elderly and debilitated patients, it is recommended that the dosage be limited to 15 mg to reduce risk of oversedation, dizziness, confusion and/or ataxia. Consider potential additive effects with other hypnotics or CNS depressants. Employ usual precautions in severely depressed patients, or in those with latent depression or suicidal tendencies, or in those with impaired renal or hepatic function.

Adverse Reactions: Dizziness, drowsiness, light-headedness, staggering, ataxia and falling have occurred, particularly in elderly or debilitated patients. Severe sedation, lethargy, disorientation and coma, probably indicative of drug intolerance or overdosage, have been reported. Also reported: headache, heartburn, upset stomach, nausea, vomiting, diarrhea, constipation, GI pain, nervousness, talkativeness, apprehension, irritability, weakness, palpitations, chest pains, body and joint pains and GU complaints. There have also been rare occurrences of leukopenia, granulocytopenia, sweating, flushes, difficulty in focusing, blurred vision, burning eyes, faintness, hypotension, shortness of breath, pruritus, skin rash, dry mouth, bitter taste, excessive salivation, anorexia, euphoria, depression, slurred speech, confusion, restlessness, hallucinations, and elevated SGOT, SGPT, total and direct bilirubins, and alkaline phosphatase; and paradoxical reactions, e.g., excitement, stimulation and hyperactivity.

Dosage: Individualize for maximum beneficial effect. *Adults:* 30 mg usual dosage; 15 mg may suffice in some patients. *Elderly or debilitated patients:* 15 mg recommended initially until response is determined.

Supplied: Capsules containing 15 mg or 30 mg flurazepam HCl.



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News Notes

(continued from page 458)

Dr. C. Douglas Maynard, professor and chairman of the Department of Radiology, has been appointed to the editorial board of the international journal, *Magnetic Resonance Imaging*.

Dr. Lawrence A. McHenry, professor of neurology, has been appointed historian and archivist for the American Neurological Association. He has transferred the archives of the ANA to Bowman Gray for permanent storage and maintenance. He will work on the history of the ANA in conjunction with his work on the development of American neurology in the late 19th century.

Dr. Timothy E. Poe, assistant professor of family and community medicine (clinical pharmacy), has been elected to the board of directors of the North Carolina Society of Hospital Pharmacists.

Dr. Richard W. St. Clair, professor of pathology, has been selected to serve on the Editorial Board of the journal *Atherosclerosis*.

Duke University Medical Center

Dr. James B. Wyngaarden, chairman of the medical center's Department of Medicine since 1967, was nominated by President Reagan as director of the National Institutes of Health.

"Dr. Wyngaarden is uniquely qualified to serve the nation as director of the National Institutes of Health," said Dr. William G. Anlyan, vice president for health affairs. "He is one of the nation's most distinguished clinical investigators and he has been one of the pillars of biomedical research at the national level. He will leave a major gap at Duke University."

A graduate of the University of Michigan Medical School, Wyngaarden served his internship and residency at Massachusetts General Hospital.

Between 1953 and 1956, he worked at NIH; first as an investigator in the Laboratory of Chemical Pharmacology and then as a clinical investigator in the National Institute of Arthritis and Metabolic Diseases. He joined Duke in 1957 as an associate professor of medicine.

Dr. George Ellis, a medical center associate professor of endocrinology, told a capacity crowd at the March 2 "Health Night Out" lecture that "diabetes can be dealt with before you get it."

"What some of you may not have realized is that what we consider the 'normal American lifestyle' can

make you sick," said Ellis. "We ride in cars instead of walking, eat Big Macs and cokes, have machines and paid athletes to get our exercise for us, and carry stored energy to the tune of 3,500 calories for every pound of fat."

Ellis told the crowd that excessive weight is the most common predisposing factor to Type II diabetes, the non-insulin dependent form which accounts for 80% to 90% of all diabetes.

He discussed insulin dosages and the different tools available to measure the amount of insulin in the blood and urine.

"From a physician's standpoint, diabetes is a difficult disease because it's really up to the patient to take over the treatment and adjust medication on his own with coaching by the physician to get good control," he said. "You either manage diabetes, or it manages you."

Dr. H. Keith H. Brodie, James B. Duke professor of psychiatry and chairman of that department, will become Duke University's new chancellor July 1.

Brodie, who is also a member of Duke's law school faculty, succeeds A. Kenneth Pye, who will return to the law school faculty and direct international studies at Duke.

"We are very fortunate to have a man of Dr. Brodie's experience and enthusiasm to assume the rigorous responsibilities of Duke's chancellor," said Duke's President Terry Sanford.

Brodie, 42, has been at Duke since 1974. Before coming to Duke, he was in the Department of Psychiatry at Stanford University and program director of the General Clinical Research Center in the Stanford School of Medicine.

He is a 1961 graduate of Princeton University and received his medical degree from Columbia University College of Physicians and Surgeons in 1965. He received additional training at Ochsner Foundation Hospital, New Orleans; Columbia-Presbyterian medical center, New York City; and the National Institute of Mental Health.

Medical center immunologist, Dr. D. Bernard Amos, an innovator in the effort to understand and define a system of genes called the major histocompatibility complex, crucial to the success of organ and tissue transplants, has won the 3M Life Science Award.

The \$10,000 award, sponsored by 3M and administered by the Federation of American Societies for Experimental Biology, was presented to Amos in April at the General Session of the Federation's annual meeting in New Orleans.

Amos is James B. Duke Professor of Immunology and Experimental Surgery and chief of the division of immunology at Duke. He came to Duke in 1962 as a

professor in the division of immunology, and initiated a study of human skin grafting. The results of that study provided the first evidence of a major histocompatibility complex in humans.

He has received numerous awards and honors.

At the same meeting, a medical center professor of pharmacology, Dr. Theodore A. Slotkin, was named the 1982 recipient of the John J. Abel Award in Pharmacology. That award is given annually to recognize outstanding research in the field by a young scientist.

The award, which consists of \$2,500 and a bronze medal, is supported by the Eli Lilly Company. The young pharmacologist was recognized for his contributions in the research of the developing nervous system.

Slotkin has received numerous honors and awards for his work. In 1975, he was named the Outstanding Young Investigator of the North Carolina Heart Association. He was one of the first recipients of the Pharmaceutical Manufacturers Association's Foundation Faculty Development Awards in Basic Pharmacology. He also holds a current Research Scientist Development Award from the National Institute on Drug Abuse.

Slotkin received his doctorate degree in pharmacology and toxicology from the University of Rochester in New York in 1970. He worked as a postdoctoral fellow in biochemistry at Duke in 1970, and was appointed an assistant professor of physiology and pharmacology at Duke in 1971. In 1979, he was appointed a full professor of pharmacology.

A medical center researcher has received a \$125,000 grant from the Multiple Sclerosis (MS) Society to study the cells that may be the major link to MS.

"The cause of MS is unknown," said Dr. Andrew K. Hodson, a pediatric neurologist whose main research interest is brain development. "Many theories so far are based on animal models, but MS is a disease unique to humans. Only by studying human brain material will we understand MS."

Hodson said researchers know that MS patients show a loss of myelin. Areas of the brain damaged by MS also show a loss of oligodendrocytes. Theories about the cause of MS center around myelin breakdown, he said, and the function of oligodendrocytes may give a clue to that breakdown.

"I'm specifically studying the role of oligodendrocytes," Hodson said. "I want to find the answer to the question, 'Are you born with abnormality in the oligodendrocyte plasma membrane that leads to MS?' Or does a virus induce the change?"

Dr. William G. Anlyan, vice president for health affairs, was chosen by the Durham Chamber of Commerce as one of two recipients of the Civic Honor Award. The presentation was made at the chamber's 70th annual meeting.

Before an audience of about 900 in Cameron Indoor Stadium, Anlyan and George R. Herbert, president of the Research Triangle Institute, were presented the award by former Durham Mayor James Hawkins.

The award is given annually by the chamber to recognize persons who have made extraordinary contributions to the Durham Community. Anlyan was cited for his leadership at the medical center since 1964 through times of major growth and development. He was also commended for his work in the Durham Community, including his help in implementing the City of Medicine campaign.

A medical center researcher is examining data collected from 30 organ procurement centers throughout the southeast so he can learn what affects kidney transplant success rates when living relatives are the donors.

Dr. Fred Sanfilippo, director of the medical center's Transplantation Laboratory, hopes the study will provide the key to understanding what causes renal transplant failure in these patients. He especially wants to know why blood transfusions from the kidney donor before surgery improve the acceptance of transplants from living related donors.

"A group of researchers recently discovered that these transfusions increase the survival rate," Sanfilippo said. "It's now becoming accepted procedure but we don't know why it works, and exactly what the risks are."

Data is collected prospectively on all patients accepted for living related transplants in the Southeastern Organ Procurement Foundation (SEOPF). The organization, which was the first of its kind in scope, consists of 39 transplant centers in the southeast.

The immuno-pathologist said he hopes data from the study will answer questions about recurrent disease among kidney failure patients.

"At least 40% of persons in renal failure have had some form of glomerulonephritis," he said. "Kidney transplants are still a relatively new procedure," he said. "And we need to systematically study those who have transplants and those who donate organs to find out what affects acceptance."

The Burroughs Wellcome Fund has provided major support for establishing the Wellcome Clinical Professorship in honor of one of the medical center's most eminent cancer specialists, Dr. R. Wayne Rundles. The clinical professorship will support professors involved in cancer research.

Rundles, who is a professor of medicine and former head of the hematology division, has been associated with Burroughs Wellcome Company since 1955. He served as a consultant and participated in the testing and development of several major drugs which the company now markets. He was recently reappointed as a consultant, following his retirement from Duke.

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Rundles serves as an advisor to the Burroughs Wellcome Fund.

Dr. Stephen H. Gehlbach, associate professor in the department of Community and Occupational Medicine, is author of a book, *Interpreting the Medical Literature: A Clinician's Guide*, published in February.

Dr. Jeffrey J. Collings, associate professor of surgery and assistant medical research professor of microbiology and immunology, has been appointed co-chairman of the program committee for the Comprehensive Cancer Center seminar series.

Dr. John L. Walker, an assistant professor of psychiatry at Duke and a staff psychiatrist at the Durham Veterans Administration Medical Center, has written a book, *Everybody's Guide to Emotional Well-Being*, published in April.

The 220-page text "was written to help people learn how to help themselves get help," Walker said. The psychiatrist devoted a substantial portion of the book to explaining different types of psychotherapy and how to choose a therapist.

James K. Roche, assistant professor of medicine, received a \$69,863 research award from the National Institute of Arthritis, Diabetes, Digestive and Kidney Diseases to study the immunological mechanisms for gut inflammation.

David G. Shand, professor and chief of the division of clinical pharmacology, received a research grant of \$76,926 from the National Heart, Lung and Blood Institute. Shand is studying "Plasma Binding and Drug Disposition in Health and Disease."

Jenny P. Ting in the Department of Microbiology received a national research service award of \$19,040

from the National Institute of Neurological and Communicative Disorders and Stroke to study neuroimmunology.

Don R. Bahner Jr. in the Pediatric Pulmonary Laboratory received a \$1,500 student traineeship award from the Cystic Fibrosis Foundation. The title of Bahner's project is "Sensitivity of *Pseudomonas Aeruginosa* to CF Serum and Lavage Effluent."

Fearghus T. O'Foghludha, professor of radiology, received a \$52,281 research grant from the National Cancer Institute to study the integral and mean dose in CT examinations.

L. Michael Cobo, assistant professor of ophthalmology, received a research grant of \$14,725 from the National Eye Institute. Cobo's research project is "Morphology of Post Surgical Lens Capsule Opacification."

Thomas C. Vanaman, director of the Basic Research Program and professor of microbiology, received a \$69,399 research grant from the National Cancer Institute to study the biochemistry of cellular transformation.

Robert A. Rosati, associate professor of cardiology and director of clinical epidemiology, received a specialized research center grant of \$929,905 from the National Heart, Lung and Blood Institute for the ischemic heart disease specialized center of research.

Gerald S. Lazarus, J. Lamar Callaway Professor and chairman of the division of dermatology, received a \$116,690 research grant from the National Institute of Arthritis, Diabetes, Digestive and Kidney Diseases to study the role of proteinases in cutaneous catabolism.

Vincent W. Dennis, associate professor and chief of the division of nephrology, received an \$87,255 research grant from the National Institute of Arthritis, Diabetes, Digestive and Kidney Diseases. The title of his project is "Transport and Metabolism in Proximal Renal Tubules."

Judith L. Swain, assistant professor of cardiology and physiology, was given a new investigator research award of \$34,758 by the National Heart, Lung and Blood Institute. Swain is studying the role of purine metabolism in myocardial function.

MICHEL de MONTAIGNE [1533-1592]

Whenever a new discovery is reported to the scientific world, they say first, "It is probably not true." Thereafter, when the truth of the new proposition has been demonstrated beyond question, they say, "Yes, it may be true, but it is not important." Finally, when sufficient time has elapsed to fully evidence its importance, they say, "Yes, surely it is important, but it is no longer new."

In Memoriam

RICHARD STERLING KELLY, JR., M.D.

It is with profound sorrow that we must report the untimely death, on 2 January 1982, of our colleague, Richard Sterling Kelly, Jr., M.D.

Dr. Kelly was born in Erwin, N.C., the eldest of three children of Roberta Davis Kelly and Richard Sterling Kelly. He was educated at Davidson College and Jefferson Medical College and was a Diplomate of The American Board of Pediatrics and a Fellow of the American Academy of Pediatrics. His distinguished career included service as a medical officer in the United States Naval Reserve during World War II and terms of office as President of the Cumberland County Medical Society, Chief of Staff of the Cape Fear Valley Hospital, Chairman of the Section on Pediatrics for the North Carolina Medical Society, and President of the North Carolina Pediatric Society. Survivors include his widow, Mrs. Rosalie Huske Kelly, and his

children, Richard Sterling Kelly, III, of Greensboro, Mrs. Robin Kelly Legg of Raleigh, William Huske Kelly, Patricia Andrews Kelly, and John Worthington Kelly of the home.

Dr. Kelly was engaged in the private practice of pediatrics in Fayetteville for thirty years during which time he cared for two generations of well served patients. His unfailing good humor endeared him to his youthful patients, and his superb skills in the practice of pediatrics won for him the admiration and respect of his colleagues. He was a man of many interests, a good citizen, a grand companion, a loyal friend, and, most especially, a loving husband and father. He is sadly missed by his family, friends, and community who can be consoled in their loss by the deep satisfaction that derives from remembering his honored and useful life.

CUMBERLAND COUNTY
MEDICAL SOCIETY

There are some foods which are extremely detrimental and it is proper for man never to eat them, such as large salted old fish, old salted cheese, truffles, mushrooms, old salted meat, wine must, and a cooked dish which has been kept until it acquired a foul odor. Likewise, any food whose odor is bad or excessively bitter is like a fatal poison unto the body. There are other foods which are also detrimental but are not as injurious as the aforementioned ones. Therefore, of these, one should eat only a little and only after [intervals of] many days. . . . Examples [of this type of food] are large fish, cheese, and milk that is kept for 24 hours after milking. The meat of large oxen and large he-goats, beans, lentils, peas, barley bread, unleavened bread, cabbage, leeks, onions, garlic, mustard, and radishes — all of these are detrimental foods.

Ibid., No. 9

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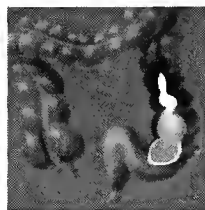
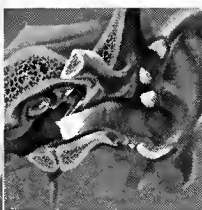
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Indications and Usage: For the treatment of urinary tract infections due to susceptible strains of the following organisms: *Escherichia coli*, *Klebsiella-Enterobacter*, *Proteus mirabilis*, *Proteus vulgaris*, *Proteus morganii*. It is recommended that initial episodes of uncomplicated urinary tract infections be treated with a single effective antibacterial agent rather than the combination. Note: The increasing frequency of resistant organisms limits the usefulness of all antibacterials, especially in these urinary tract infections.

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For enteritis due to susceptible strains of *Shigella flexneri* and *Shigella sonnei* when antibacterial therapy is indicated.

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Precautions: General: Use cautiously in patients with impaired renal or hepatic function, possible folate deficiency, severe allergy or bronchial asthma. In patients with glucose-6-phosphate dehydrogenase deficiency, hemolysis, frequently dose-related, may occur. During therapy, maintain adequate fluid intake and perform frequent urinalyses, with careful microscopic examination, and renal function tests, particularly where there is impaired renal function. Bactrim may prolong prothrombin time in those receiving warfarin; reassess coagulation time when administering Bactrim to these patients.

Pregnancy: Teratogenic Effects: Pregnancy Category C. Because trimethoprim and sulfamethoxazole may interfere with folate metabolism, use during pregnancy only if potential benefits justify the potential risk to the fetus.

Adverse Reactions: All major reactions to sulfonamides and trimethoprim are included, even if not reported with Bactrim. Blood dyscrasias: Agranulocytosis, aplastic anemia, megaloblastic anemia, thrombopenia, leukopenia, hemolytic anemia, purpura, hypoprothrombinemia and methemoglobinemia. Allergic reactions: Erythema

multiforme, Stevens-Johnson syndrome, generalized skin eruptions, epidermal necrolysis, urticaria, serum sickness, pruritus, exfoliative dermatitis, anaphylactoid reactions, periorbital edema, conjunctival and scleral injection, photosensitization, arthralgia and allergic myocarditis. Gastrointestinal reactions: Glossitis, stomatitis, nausea, emesis, abdominal pains, hepatitis, diarrhea and pancreatitis. CNS reactions: Headache, peripheral neuritis, mental depression, convulsions, ataxia, hallucinations, tinnitus, vertigo, insomnia, apathy, fatigue, muscle weakness and nervousness.

Miscellaneous reactions: Drug fever, chills, toxic nephrosis with oliguria and anuria, periarteritis nodosa and L.E. phenomenon. Due to certain chemical similarities to some goitrogens, diuretics (acetazolamide, thiazides) and oral hypoglycemic agents, sulfonamides have caused rare instances of goiter production, diuresis and hypoglycemia in patients, cross-sensitivity with these agents may exist. In rats, long-term therapy with sulfonamides has produced thyroid malignancies.

Dosage: Not recommended for infants less than two months of age.

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1. Rubin RH, Swartz MN. *N Engl J Med* 303:426-432, Aug 21, 1980. 2. Data on file, Medical Department, Hoffmann-La Roche Inc.

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